THE

MEDICAL EXAMINER.

CONTENTS OF

NO. II. VOL. X.—NEW SERIES.—FEBRUARY, 1854.

ORIGINAL COMMUNICATIONS.

Case of Pulsating Tumor of the Occiput. By Jno. Neill, M. D., Surgeon to the Pennsylvania Hospital. - - - - - 65

Microscopic Examination of a case of Morbus Brightii, in connection with Melanotic Cancer. By Joseph H. Wythes, M. D. - - 72

Mortality of Philadelphia for October, November and December, 1853, collated from the register kept at the Health Office; with a summary for the entire year. By Wilson Jewell, M. D. - 77

On the Treatment of Inflammatory Rheumatism. By O. C. Gibbs, M. D., of Perry, Lake County, Ohio. - - - - - 87

On the Behavior of Alcohol in the Animal Organism. By Dr. Ducheck. - - - - - - - - - - 90

On the Chemico-physiological effects of Coffee. By Julius Lehmann. 98

BIBLIOGRAPHICAL NOTICES.

A Treatise on the Diseases of the Eye. By W. Lawrence, F. R. S., Surgeon Extraordinary to the Queen, &c., &c. A New Edition. Edited with numerous additions, and two hundred and forty-three illustrations, by Isaac Hays, M. D., Surgeon to Wills Hospital, &c. - - - - - - - - - 105

Chemistry and Metallurgy, as applied to the Study and Practice of Dental Surgery. By A. Snowden Piggott, M. D., late Professor Anatomy and Physiology in the Washington University of Baltimore. - - - - - - - - - - - 108

MEDICAL NEWS.

Dr. Robert James Graves. - - - - - - - - - 111
Death from Chloroform. - - - - - - - - - - 111
New American Medical Monthly. - - - - - - - - 111
Officers of the Philadelphia County Medical Society for 1854. - - 112
Death of Dr. Samuel McClellan. - - - - - - - - 112
" Dr. John Esten Cooke. - - - - - - - - 112
" Dr. A. A. Gittenau. - - - - - - - 112
Medical Society of the State of Pennsylvania. - - - - - - 113

RECORD OF MEDICAL SCIENCE.

On some of the principal effects resulting from the Detachment of Fibrinous Deposits from the Interior of the Heart, and their mixture with the circulating blood. By Wm. Senhouse Kirkes, M. D., Licentiate of the Royal College of Physicians. - - 113
On Peritonitis, simulating perforation of the intestines. By Dr. Thirial. 120
On the Expansion of the surface of the brain and its connection with the development of mind. By Baillarger. - - - - - 122
Remarkable case of Foreign Bodies in the Stomach and Duodenum, Complete Obstruction of the Bowel and Mechanical Displacement of Organs. By John Marshall, Esq. - - - - - 123
Practical Remarks upon some Important Medicinal Agents not in General Use. By F. E. Wilkinson, M. D. - - - - - 125
Abstract of Meteorological Observations for December, 1853, made at Philadelphia, Pa. By Prof. James A. Kirkpatrick. - - 127
Abstract of Meteorological Observations made at Philadelphia, Pa., for the year 1853. By Prof. J. A. Kirkpatrick. - - - 128

NOTICE TO CORRESPONDENTS.

Communications and Books for notice should be addressed to the Editors, care of Messrs. Lindsay & Blakiston.

Letters, &c., connected with the *business affairs* of the Journal should be addressed to the Publishers.

Papers for publication must be received *before* the 16th of the month, or they cannot appear in the forthcoming number.

The following Journals have been received in exchange:
The American Journal of Medical Sciences, January.
Medical News, ditto.
Philadelphia Journal of Pharmacy, ditto.
New York Journal of Medicine, ditto.
New York Medical Gazette, ditto.
American Medical Monthly, ditto.
Nelson's American Lancet, ditto.
Boston Medical and Surgical Journal, (weekly.)
Buffalo Medical Journal, Jan.
Virginia Stethoscope, Dec.
Virginia Medical and Surgical Journal, Jan.
New Hampshire Journal of Medicine, January.
Western Lancet, Dec.
Kentucky Medical Recorder, ditto.
Nashville Journal of Medicine, Jan.
Peninsular Journal of Medicine, ditto.
New Jessey Medical Reporter, ditto.
Iowa Medical Journal, ditto.
Southern Medical and Surgical Journal, ditto.
Southern Journal of Medical and Physical Sciences, ditto.
Charleston Medical Journal, ditto.
Western Journal of Medicine and Surgery, ditto.
Montreal Medical Chronicle, ditto.
Upper Canada Journal, ditto.
North Western Medical and Surgical Journal, Dec.
American Journal of Insanity, Jan.
People's Medical Gazette, ditto.
Dental Register, ditto.
Family Dental Journal, ditto.
Monthly Journal of Medical Science, (Edinburgh) Dec.
London Lancet.
London Medical Times and Gazette.
Dublin Medical Press.

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PAMPHLETS RECEIVED.

Functional and Sympathetic Affections of the Heart. By J. W. Corson, M.D.
Croup, its Pathology and Treatment. By Samuel Tyler, M. D.
A Glance at the Fevers of the Monongahela Valley. By J. S. Van Voorhis, M.D.
Diseases of the Uterine System. By C. D. Griswold, M. D.
Introductory by Jonathan Knight, M. D.
Introductory by Charles A. Lee, M. D.

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The foreign correspondents of the Examiner will please direct their Exchanges, Books for review, and other communications to the care of Trubner & Co., No. 12 Paternoster Row, London, or Mr. H. Bosange, 21 Bis, Quai Voltaire, Paris.

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THE

MEDICAL EXAMINER.

NEW SERIES.—NO. CX.—FEBRUARY, 1854.

ORIGINAL COMMUNICATIONS.

Case of Pulsating Tumor of the Occiput. By Jno. Neill, M. D., Surgeon to the Pennsylvania Hospital.

From the Notes of Dr. Jas. E. Rhoads, House Surgeon.

David Patterson, aged 70, was admitted into the Pennsylvania Hospital, April 28, 1853. He stated that for many years he had a small hard tumor upon the right side of the back part of the head, which never pulsated or gave him any pain till about five months previous to his admission, when accidentally pressing the tumor against the pillow whilst lying in bed he heard something crack in it, and that it had constantly enlarged since this occurrence.

At the time of his admission there existed a large, regularly rounded tumor upon the right posterior part of the head, commencing about three quarters of an inch behind the right ear, and extending to the left of the median line posteriorly. It reached also from the margin of the hairy scalp nearly to the top of the head. It was eight inches from side to side in either direction over the most prominent part, and sixteen inches in circumference around the base.

The accompanying wood-cut is taken from a very striking likeness of the patient taken by my friend Dr. F. W. Lewis.

The skin over the tumor was stretched and reddened, but not hot nor tender, and could be moved freely upon the parts be-

neath. There was no pain or uneasiness in the tumor, except a sense of tension.

It had a *pulsation* distinctly perceptible both to the eye and touch, accompanied by a marked *aneurismal bruit*. The pulsation was not a simple rising and falling of the tumor, but an expansion in all directions.

The right occipital artery could be felt beating strongly and with a distinct thrill. Pressure upon it sensibly diminished the pulsation of the tumor, and pressure upon both occipitals almost entirely destroyed pulsation.

There was no swelling of the glands in the vicinity, and no other tumor about the body. The pulse was regular—the radials were not ossified—and the sounds of the heart were natural. By the 30th, the tumor had rapidly increased in size, the skin over it became reddened and tense, and threatened soon to give way, and it was decided to tie both occipitals. Each vessel was secured on the cardiac side of the origin of the princeps cervicalis. After the operation no pulsation could be perceived, nor could the bruit be heard. The tumor became somewhat smaller and much less tense. Its color also was much less deep.

In the evening, however, the patient had some fever, and the pulsation returned strongly. On the following day, May 1st, the pulsation was nearly as strong as ever, but the bruit was scarcely

audible; the tumor was hot and the skin over it red. Cold was applied by lint dipped in ice water.

May 3. The tumor was smaller, the pulsation decidedly less —no bruit, the skin less red—no fever. The wound looked well and had partially healed. The cold was continued and compression maintained by means of a bandage.

May 5. Pulsation was still distinct—the bruit just audible. A small abscess had formed in the left wound beneath the skin, which had united. The evacuation of the pus was followed by a chill and subsequent fever.

May 7. Erysipelatous inflammation attacked the tumor and spread over the whole scalp. The inflammation gradually extended over the face and a portion of the neck, and was attended with great swelling and severe general prostration.

Upon the 14th, the right ligature came away.

May 16. The erysipelas had disappeared, leaving the integuments of the tumor œdematous and much reddened. The pulsation remained about the same, but still somewhat less than before the operation. The tumor was covered with collodion daily, with reference to its contracting effect and the support it would afford to the skin.

May 21. The remaining ligature came away. There is little or no change in the size of the tumor or its pulsation. The patient's general health is as good as before the operation.

The collodion was constantly applied, and a roller so placed around the base of the tumor as to constrict it and press upon the small vessels supplying it. Small branches of the temporal arteries could be felt entering the tumor, and the posterior auriculars were enlarged. Pressure upon the temporals had no appreciable effect upon the pulsation.

He remained in the house until July 17, when he applied for his discharge, thinking himself sufficiently relieved to attend to some little business. When he left the Hospital the tumor was about the same size as on his admission, but the pulsation and bruit were much less. There was no pain or tension in it, and it showed no disposition to extend itself or to ulcerate. The skin over it was loose and could readily be moved upon the parts beneath.

In September he died at the Alms-house, and after the post-

mortem had been made I had an opportunity of examining a section of the head containing the tumor; it had encroached upon the cavity of the cranium, through an opening with rough and jagged edges, of about three inches in diameter.

The dura mater was pushed into the cranium and was closely connected by its external surface with the tumor. The internal surface of the dura mater seemed perfectly healthy.

Upon cutting into the tumor it presented the appearance of encephaloid cancer. The larger part of the section was of that white kind which so much resembles medullary matter. and the remainder had a pinkish grey tint, indicative of greater vascularity. The interior of the tumor was intersected with numerous dense bands, and in the intervals were several small cysts containing fluid.

About one inch and a half from the tumor there had been

FIG. 1.

disease and absorption of a portion of the parietal bone. The opening in the bone was one inch in diameter, and seemed to be so regularly circular on one side that it appeared to have

been made with a trephine. The pericranium and the dura mater did not seem to be diseased, but between the two there was a reddish material, so soft that it was almost semifluid.

The microscopic examination of these products shows their true nature.

When the material of the tumor was first examined, fig. 1, (see preceding page,) the cancer cell was much obscured by oil globules, which were so numerous as to suggest the idea that the growth was undergoing fatty degeneration. The cells were pale, large, irregular in form, and frequently folded and wrinkled.

Fig. 2.

The nucleus was very large. Fig. 2 represents a field exhibiting the cells from the eroded spot in the cranium near the tumor, and very distinctly reveals the cancerous nature of the disease.

Remarks. The reader will probably be surprised at the manner in which the foregoing case terminated. There was certainly a great want of correspondence in the physical characters of the disease, and those revealed by the post-mortem examination.

Here was a pulsating tumor, with perfect aneurismal pulsation and bruit; pressure on the occipitals interrupted the pulsation, and the ligature subsequently destroyed the pulsation and bruit completely. The impression that it was an aneurism was irresistible, and I thought that it was a diffused aneurism. Subsequently, however, to the operation the pulsation returned, and doubts began to arise as to its aneurismal nature, still there was no reasonable grounds for such suspicions. Under such circumstances the attention of any one would naturally be directed to the possibility of its being a disease of the brain or dura-mater, which had worn an opening in the skull, and that the pulsation was dependant upon that of the brain; but, if such had been the case, the pulsation would not have ceased upon the application of a ligature to the artery. And, moreover, such extensive disease of the brain or its membranes could hardly have existed so long without producing some functional disturbance.

Then, again, the subject of pulsating tumors in bone and osteo-aneurism would be brought to mind, but yet the position and characters of this tumor would not allow it to be included under this class of diseases.

The probability of its being cancer often occurred to me, but of course there could be no suspicion of its being a hard cancer or an osteo-sarcoma; and when, by feeling the tumor, the idea of a soft or medullary cancer was suggested, its pulsation and the fact that that pulsation was once controlled by pressure upon an artery, at once counteracted the conclusion.

In fact, the case is a rare one. There is no record that I have yet seen of a *Pulsating encephaloid tumor of the occiput*, and on this account I have deemed the publication of this case as justifiable and useful.

Rokitansky gives the best account of this kind of cancer in bone, and his description is as follows:

"There is a peculiar form of cancer, which Otto describes as a gnawing or erosion of bone. Lobstein speaks of it under the title of Osteolyosis; but he includes amongst his cases some which were examples of cystoid disease and cystosarcoma, and perhaps also of areolar cancer. On the broad bones of the skull, or on the ossa innominata, spots are noticed in which a foreign substance occupies the place of the natural bone. Besides other peculiarities, this substance presents very various degrees of consistence, sometimes being lardaceo-cartilaginous, and white

or whitish-red; sometimes a fleshy-fibred, red substance; sometimes a gelatinous, an albumino-serous, or a fatty and serous fluid of a yellowish or greyish color, or altogether colorless. It commences in the diplœ, which it soon eats away, forming a cavity which, in the bones which have been mentioned, is at first inclosed within their compact tables. This covering disappears at several points, and leaves a smooth round, an oval, or an irregular sinuous opening, or a gap, which is covered on both sides by periosteum. The morbid growth then interweaves itself with this membrane, especially with the dura mater when the skull is affected; and not unfrequently advances in it beyond the margins of the opening in the bone. The diplœ is usually eroded to a greater extent than the compact walls of the bone, and hence it is that the margins of the opening are so uneven and jagged, and the compact tables bevelled from within outwards.

There is generally no elevation of the diseased spot above the level of the bone, or at most it is very slightly raised, yet I have observed that the growth which fills the cavity in the bone does sometimes rise above the surface and form a tumor, which, in a flat bone, projects on both its sides. And especially when the morbid growth consists of a gelatinous fluid, it expands the tables of the bone, in the form of a bladder, and in that state is probably the disease first seen by Van Wy, and named by him Hydrosteon. It must not be confounded with cysts and cystoid disease of bone.

This form of cancer does not differ in its elementary composition from that of fibrous and medullary cancer; every variety indicated above, in the aggregation of the elementary parts—in consistence—is sometimes met with in the same individual.

There can be no question as to the cancerous nature of the disease; it is quite common to find it combined with a very extensive production of cancer in the internal organs.

The nidus in which cancer growths originate on the Haversian canals, the tissues lining the cells and medullary cavities of the bones, the medullary system generally; and it is from these points that the compression, the erosion of the bony substance by pressure, and the formation of skeletons in the morbid mass proceed. Cancer almost always originates in the diplœ, in cancellous bones and parts of bones, or in the medullary cavities."

Microscopic Examination of a case of Morbus Brightii, in connection with Melanotic Cancer. By JOSEPH H. WYTHES, M. D.

In the beginning of April, 1853, Miss Mary Leib, aged 47, put herself under my care. She had been afflicted in one way or other since she was 14 years of age, and had been the most of that time under medical treatment. She was of medium height and stoutness; walked with a slight stoop in her shoulders; had a peculiarly anxious expression of countenance, though of cheerful and patient temper; had always been temperate; was in easy circumstances, and had not ceased to menstruate.

She complained of palpitation of the heart, shortness of breath, and of swelling in her ankles and feet. On examination, I found the heart's action full, strong, and heaving, diffused throughout the chest, its rythm altered, and its sound muffled, as if oppressed. Lungs dull on percussion, and respiration impeded. I judged the case to be one of hydrothorax, with hypertrophy and dilatation of the left ventricle of the heart. The lower extremities were swollen from dropsical effusion.

I gave her a pretty active purge of jalap and cream of tartar, and directed a pill, containing digitalis and squill, each half a grain, to be taken three times a day. After the dropsical symptoms had subsided, I ordered tinct. digitalis, 10 drops, three times a day, with a view to moderate the heart's action. This treatment appeared to answer my expectations and was discontinued.

In a few days afterwards, I found my patient in an attack of epileptic convulsions, which soon wore off. As she had complained, previously, of pain in the back, I was led to suspect granular degeneration of the kidneys, and on testing the urine with heat and nitric acid, I found it very greatly albuminous.

Attacks of dropsical effusion and epilepsy succeeded each other for several months, yielding, apparently, to treatment, which was varied according to circumstances. Sometimes, when indicated by a full, strong pulse, venesection afforded great relief to the oppressed lungs. In a similar case, which I attended in company with another physician, so great was the relief afforded by venesection, that the patient rode, the next day, upon horseback, up-

wards of 40 miles, with no immediate ill consequence, though he died within a month.

On Oct. 31st, I desired a consultation with Dr. Carpenter, of Pottsville. The patient was laboring under great oppression, from hydrothorax, with comatose symptoms; and ordinary purgatives, &c., failed to operate. We agreed to use Elaterium 1-16th gr., Calomel 1 gr., Jalap 2 grs., in a pill, to be given two or three times a day. This having no effect save the production of nausea, I altered it to Elaterium 1-5th gr., Bi-Tart. potass 3 grs., Pulv. Zingiber 2 grs. She took this three times a day, for several days, with but slight (if any) effect on the bowels, although the effusion in the chest and limbs evidently decreased, and the patient seemed better. She so far recovered as to be able to go about the house. On the 20th of November she was suddenly attacked with dyspnœa and coma; in which condition she died the next morning.

At the request of the family, I made a post-mortem examination on the 22d, being assisted by Drs. G. W. Brown and J. I. Wright.

The outside of the body presented nothing peculiar, except a fluctuation, on pressure, at the base of the chest. The blood in the veins was in a somewhat fluid state, for the bandage having been removed from the arm of the corpse, (where she had been bled on the 20th,) a considerable quantity of blood had escaped.

On opening the chest, a large quantity of serous fluid was observed within the pleura. We took from thence 20 teacupsful—about equal to 120 f.ʒ. There were also very extensive fibrous adhesions of the pleura on the left side.

The lungs were congested with venous blood, and contained small, melanotic tumors, about the size and consistence of a grain of wheat. The pericardium contained about 2 f.ʒ of bloody serum.

The heart was much enlarged—considerable dilatation of the left ventricle with hypertrophy of its walls. The muscular parietes of the right ventricle softened, so that the finger could be pushed through. The semi-lunar valves slightly thickened at the margin. The aorta much dilated, with patulous congestion of the internal membrane.

The kidneys were distinctly granular in the cortical portion,

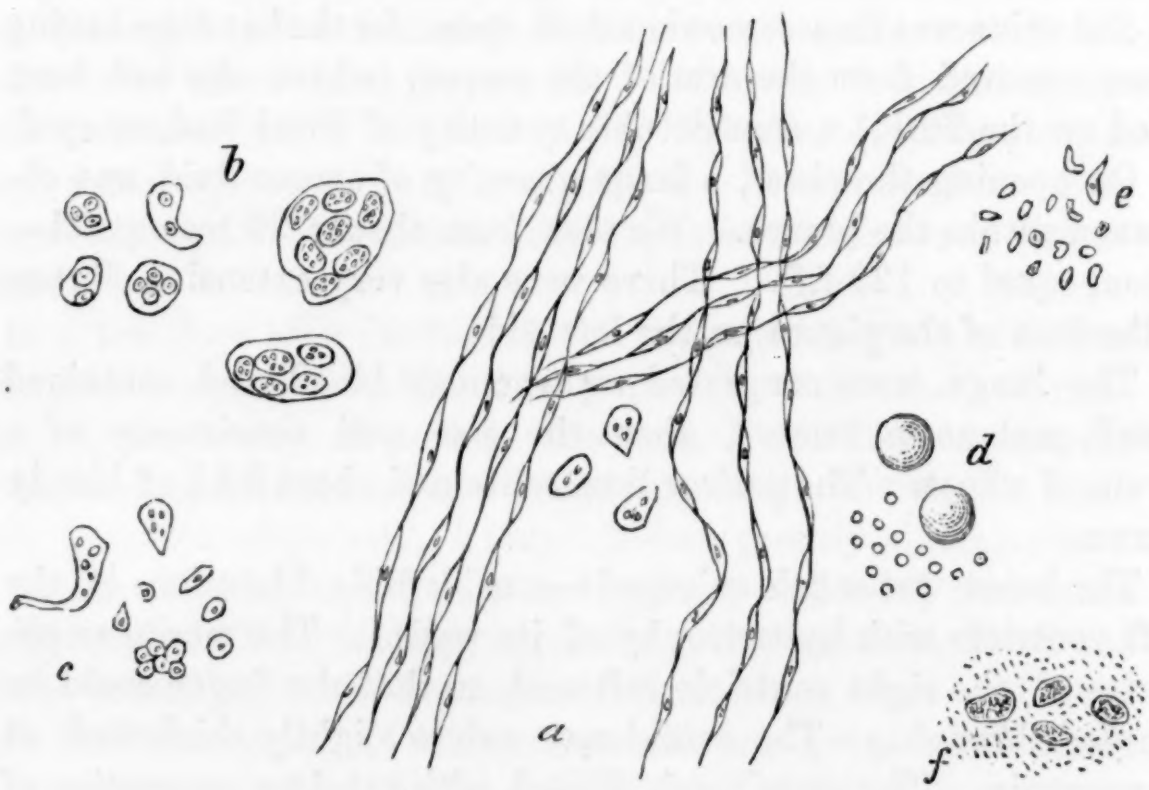
and their surface contained a number of serous cysts, varying in size from that of the head of a pin to that of a filbert.

The intestines externally and the bladder appeared quite healthy.

On the posterior surface of the uterus was a tumor, about the size of a filbert, which, on cutting, proved quite hard and fibrous, with a coarse granular appearance, having a cyst in the middle, full of black fluid. Similar melanotic cysts, with thinner parietes were observed in the ovaries, particularly the right ovary.

A microscopic examination of a thin section of the tumor from the uterus, showed a number of fusiform cells passing into fibres, which still retained their neuclei; parent-cells, containing each a number of smaller cells, most of which showed both neuclei and neucleoli; fat globules; numerous smaller fat granules; ovoid, oblong, polyhedral and caudate cells, generally neucleated; and melanotic pigment in dark granules, floating in an amorphous liquid. The melanotic matter from the ovaries, had few fusiform cells, but cells containing black pigment were more numerous.

The accompanying drawing (fig.1) shows the form of these products magnified 250 diameters.



a, fusiform or fibrous cells; b, parent-cells; c, cells with neuclei, but without neucleoli; d, fat globules and granules; e, smaller cells of various shapes; f, pigment cells and granules.

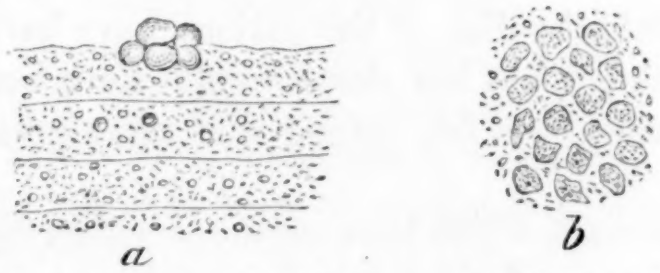
The vessels of the liver and kidney were injected, the former with size, the latter with the ethereal injection, as suggested by Dr. Goddard of Philadelphia, that having been found by me, usually, more penetrating than any other kind of minute injection.

The renal artery was filled with fine vermillion. The veins were injected with blue. On a subsequent examination, it was found that the investing tunic was strongly adherent to the surface of the kidney, which presented a mottled or marbled appearance, from the number of yellowish and apparently fatty granules which covered it.

A few, only, of the Malpighian bodies received the arterial injection, and these were disorganized, looking rather like small tufts than a convolution of vessels. The veins of the surface presented, in many parts, the peculiar stellated arrangement which has been described as characteristic of the latter stages of Bright's disease.

A thin section of the uninjected kidney showed the uriniferous tubes, deprived of epithelium, and covered with fat globules and granular matter.

The hepatic cells of the liver were covered with granular matter, and exhibited but few neuclei or oil-globules. The accompanying illustration (fig. 2) shows the appearance of both liver and kidney under the microscope.



a, Tubuli uriniferi, destitute of epithelium, and filled with fat globules and granular matter; b, Hepatic cells.

If, as suggested by Mr. Bowman, the Malpighian bodies in the kidney, serve for the elimination of the watery part of the urine, it is easy to see how their obliteration causes the accumulation of watery fluid in other parts of the body. May not the melanotic cysts be also accounted for by the increased exhalation, without corresponding absorption, arising from this cause ?

The excess of urea in the blood, as shown by the albuminous urine, sufficiently accounts for the epileptic and comatose symptoms, while the enlargement and thickening of the left ventricle of the heart, may have been caused by the increased demand upon its functions. Not only may the degeneration of the kidneys have contributed to this latter effect, by causing an engorgement of the vessels, but the abnormal stimulus of the urea in the blood, would tend to accelerate the heart's action. It appears, therefore, a primary indication to lessen, if possible, the amount of urea in the blood.

The case before us is eminently instructive, as confirmatory of the views of Dr. Johnson, Mr. Toynbee, and other eminent pathologists, respecting lesions of the kidney, and their influence on the general health. Whether these lesions can be detected in their early stages, and anything done towards a radical cure, is a question worthy of much regard; the more so as disorders of this kind are far from being uncommon.

The experiments of Dr. Lehman of Leipsic, upon himself, have clearly proved that the amount of urea eliminated by the kidneys in health, is, to a great extent, dependent on the character of the diet; the urine abounding in urea during the use of animal food, while it is very considerably diminished under a non-azotised diet. It would therefore be proper to confine a patient suffering under disorganization of the kidneys to a purely farinaceous or non-azotised diet. This was tried in the present case with great advantage, and could the diet of the patient have been wholly controlled, I have no doubt her death would have been postponed. A constant craving for a fat, strong diet was a great difficulty in the treatment.

Several other cases, which have occurred within my notice, have convinced me that a farinaceous diet, with occasional depletory medication if necessary, are our best means of reducing the poisonous stimulus of urea in the blood, and of prolonging the life of the patient.

Mortality of Philadelphia, for October, November and December, 1853, *collated from the register kept at the Health Office; with a summary for the entire year.* By WILSON JEWELL, M. D.

The whole number of deaths, recorded at the Health office, for the 4th quarter of 1853, commencing Oct. 1st, and ending Dec. 31st,—amounting to 92 days, or 13 weeks and one day—has been 2076, equal to 22½ deaths per day, or, to the population, as 1 in every 299½, estimating the same at 415,000.

The rate of deaths for this quarter, has been 18 per cent. less than the average for the three preceding quarters, and, compared with the deaths for the same quarter of 1852, a fraction under.

About 46 per cent., or nearly one half the deaths for the quarter, viz., 947, took place within the 5th year of life—a startling mortality, which deserves a far more careful attention from the profession, than it has hitherto received, in order, if practicable, to lesson the susceptibility of the system to disease and death, in the earliest periods of existence, when the tenure of life is so feeble.

The number of deaths, from reported diseases alone, amounts to 1692. Other outlets to human life are recorded, as usual, under the heads of Still Born, Old Age, Debility, Unknown, and External Causes; in all, 384.

The excess of deaths among the male population has been 208, equal to 10 per cent. of the whole number. This precedence of death in the males, is, without doubt, occasioned by their greater exposure to the causes of disease.

One half the whole number of deaths from reported diseases are accredited to Consumption of the Lungs, Convulsions, Croup, Inflammation of the Lungs, Marasmus, Inflammation of the Bronchia, Scarlet and Typhoid Fevers.

CLASS 1st.—"Endemic and Contagious diseases." Under this distinction, there has taken place 422 deaths; a reduction of 58 per cent. below the third quarter's returns. This sensible falling off, has been brought about by the almost entire absence of Cholera Infantum and Dysentery, and the decline of Fevers—there being in these, alone, a difference of 567 in favor of the 4th quarter. Croup, however, appears to have prevailed to a

considerable extent, if we judge from the number of deaths, amounting to 109. The deaths from Scarlet Fever, have also been on the progressive,

Class 2d.—The "Sporadic diseases." The deaths from this Class, present a favorable aspect, and show a decline, since the preceding quarter, of 113. Marasmus is charged with only 80 deaths, while the former quarter gives 145.

Class 3d.—"Nervous System." Here, also, we find a diminution in the mortality, equal to 200, since the last quarter's report. Convulsions, one of the common outlets of infantile existence, as usual, makes up more than one third the whole number of deaths from this class of diseases.

Class 4th.—"Organs of Respiration." As might be expected on the approach of cold weather, there has been an increase of fatality from this class of diseases, embracing, as it does, those inflammatory affections prevalent during our winter months. Consumption of the Lungs, Inflammation of the Lungs, and Inflammation of the Bronchia, stand conspicuously forth in this department of disease; amounting, in the aggregate, to 463, out of 549, the number charged to this class, or 86 per cent. of the whole.

Table No. 3 furnishes the number of deaths at fifteen distinct periods of life. As all former vital statistics have exhibited a marked mortality in infantile life over those of the other decades, so, in this instance, the first ten years present a large fatality, amounting to 1042, more than fifty per cent. of the whole number of deaths for the quarter.

The Blockley Alms House has furnished 146 of the deaths. The Blacks 114, while 19 were brought from a distance and added to our city mortality.

TABLE No. I.

Deaths for the Fourth Quarter of 1853, *classified.*

	October.	November.	December.	MALE. O.	MALE. N.	MALE. D.	FEMALE. O.	FEMALE. N.	FEMALE. D.	Total.
1. *Endemic and Contagious Diseases.* Zymotic or Epidemic	164	124	134	92	72	67	72	52	67	422
2. *Uncertain or general seat.* Sporadic diseases	113	95	79	59	51	40	54	44	39	287
3. Nervous System	77	114	117	46	69	64	31	45	53	308
4. Organs of Respiration	138	220	191	77	109	98	61	111	93	549
5. " Circulation	13	18	14	7	11	9	6	7	5	45
6. Digestive Organs	49	46	36	22	22	17	27	24	19	131
7. Urinary Organs	2	3	3	2	2	3		1		8
8. Organs of Generation	6	4	3				6	4	3	13
9. " Locomotion	6	1	2	4	1		2		2	9
10. Integumentary System		2			1			1		2
11. Old Age	11	10	14	5	2	9	6	8	5	35
12. External Causes	39	38	26	29	29	22	10	9	4	103
Still Born	37	36	44	19	24	25	18	12	19	117
Unknown	13	15	19	8	12	13	5	3	6	47
	668	726	682	370	405	367	298	321	315	2076

TABLE No. II.

1. *Endemic and Contagious Diseases—Zymotic or Epidemic.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Cholera Infantum	13	9	15	4	3													22
Croup	56	53	13	20	56	20												109
Diarrhœa	14	7	5	5	1				2	3	2		2		1			21
Dysentery	25	24	6	9	6	2		1	2	3	8	5	3	1	1			49
Erysipelas	10	4	6						2	2	1		1	2				14
Fever	3	1		1				1	1					1				4
" Bilious	5	5		1		1	1			3	1		1	1	1			10
" " Malignant	2	1								2		1						3
" " Typhoid	1											1						1
" " Remittent	1	1						1				1						2
" Congestive	3	2			1	1		1	1	1								5
" Intermittent	3	1	1						2		1							4
" Nervous		1												1				1
" Pernicious		1											1					1
" Remittent	4	2		1	1	2				1			1					6
" Scarlet	29	30	5	9	31	13	1											59
" Typhus	16	14				1	3	3	10	6	4	3						30
" " Icterodes	2	1							1		1	1						3
" " Remittent		1						1										1
" Typhoid	33	21	2		2	4	3	7	12	13	3	6	2					54
Hooping Cough	8	8	5	5	6													16
Measles		3		1	2													3
Small Pox	1									1								1
Syphilis		1								1								1
" Secondary	1		1															1
Varicella	1		1															1
	231	191	60	56	109	44	8	15	33	36	21	18	13	6	3			422

2. *Uncertain or General Seat.—Sporadic Diseases.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Abscess	2	1			1					1		1						3
" Hand	1													1				1
Angina		1										1						1
Asthma Thymicum		1	1															1
Cachexia	1			1														1
Cancer	1	3							1			3						4
" Breast		3								1		1	1					3
" Neck		1								1								1
Cyanosis	2	3	5															5
Debility	37	45	34	3		1		1	4	1	6	5	11	12	3	1		82
Disease Malignant	1												1					1
Dropsy	21	20	3	2	5	2	1	1	7	7	4	3	3	3				41
Gangrene	1												1					1
" Mouth	1				1													1
Gout	1											1						1
Hemorrhage	6	3	1							4	3	1						9
Inanition	10	9	14		1					2		1	1					19
Inflammation	2	2			1	1		1	1									4
Malformation	3	1	4															4
Marasmus	46	34	51	17	6				1	1		2		2				80
Mortification		2											1	1				2
Scirrhus		1							1									1
Scrofula	6	2	3	2				1		2								8
Sore Throat	1					1												1
Stricture	1										1							1
Tabes Mesenterica	6	1	3	2		2												7
Tumor,		1										1						1
Ulceration,		1			1													1
" Throat		2				1							1					2
	150	137	119	27	16	8	1	4	15	20	14	20	20	19	3	1		287

3. *Of the Nervous System.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Abscess of Brain		1	1															1
Apoplexy	15	11	2						1	4	4	5	5	1	4			26
Concussion of Brain		1		1														1
Congestion "	14	19	11	9	3		2		2		2	2		1	1			33
Convulsions	65	47	59	22	19	4		1	4		3							112
Disease of Brain	8	5	4	1	5				1	1			1					13
Dropsy of Brain	26	13	14	10	8	2	1		3				1					39
Effusion "	7	7	5	2	5	1				1								14
Epilepsy	5	2	3								2	1		1				7
Inflammation of Brain	21	9	10	2	5	5	2		2	2	1			1				30
Mania	2	3							1	2	1		1					5
" a potu	8								1	2	4	1						8
Palsy	6	6							1	3	1	2	2	2	1			12
Softening of Brain	2	4	1						1			1		2	1			6
Tetanus		1									1							1
	179	129	110	47	45	12	5	1	17	15	19	12	10	8	7			3

4. *Organs of Respiration.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Asthma	2	2	2								1	1						4
Congestion of Lungs	8	7	3	3				1	1	2	2	1	1	1				15
Consumption "	152	156	5	6	5	3	8	20	106	71	32	30	15	5	2			308
Disease of Chest	2	1	1	1	1													3
" Lungs	6	5	3	1		1		2	1		2			1				11
Dropsy of Chest	3	7		1		1					2	2	3	1				10
Edema of Lungs	1	1				1							1					2
Effusion "	1					1												1
" of Chest	3		1		2													3
Emphysema of Lungs	1									1								1
Fever, hectic	1		1															1
Gangrene of Lungs	1									1								1
Hemorrhage of Lungs	4	2							4	1								6
Inflamm'n of Bronchiæ	40	25	24	19	5	3			1	1	2	2	3	4	1			65
" Chest	1	3	1	3														4
" Fauces	1		1															1
" Larynx	1	1			2													2
" Lungs	47	43	27	10	12	5	2	1	6	3	10	5	7	1	1			90
" Pleura	5	2				1	1		2	1	1		1					7
" Tonsils		2			1					1								2
Tuberculosis	2	6		1	1			1	2	2		1						8
Ulceration of Larynx	1		1															1
" Lungs	1	1						1		1								2
" Trachea		1			1													1
	284	265	70	46	30	16	11	26	123	85	52	42	31	13	4			549

5. *Organs of Circulation.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Anemia		1								1								1
Aneurism	1	1							2									2
" of Aorta	1										1							1
Angina Pectoris	1											1						1
Disease of Heart	12	10	3		1		1		5	1	2	2	4	1		2		22
Dropsy "	4	2			2				2	1				1				6
Enlargem't "	3	3						2	1	1	1	1						6
Gout "	1											1						1
Inflammation "	4	1				1			1	2	1							5
	27	18	3		3	1	1	2	11	6	5	5	4	2		2		45

8. *Organs of Generation.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Cancer of Uterus . .		4									2	1	1					4
Child Bed . . .		1								1								1
Hemorrhage of Uterus.		1									1							1
Inflammation " .		1								1								1
Puerperal Convulsions.		3							2	1								3
" Fever .		2								2								2
Rupture of Uterus .		1								1								1
		13							2	6	3	1	1					13

6. *Digestive Organs.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Abcess of Liver .	1										1							1
" Rectum .	1		1															1
Bilious Colic . .	1								1									1
Cancer of Stomach .	2	1									1	2						1
" Rectum .		1											1					3
Cancrum Oris . .		2	2															1
Consumption of Bowels	2				2													2
Colic	1								1									2
Disease of Bowels .	1	1									1			1				1
" Liver . .	1	2									1	1	1					3
" Stomach .	2	2							1		2			1				4
Dropsy Abdominal .	4	2							1		1	1	1	1	1			6
Enlargement of Liver .	1									1								1
Fatty degeneration " .		1							1									1
Gangrenopsis . .		1							1									1
Hemorrhage of Stom'h .	1	2					1				1	1						3
Ileus		1									1							1
Inflam'n of Sto'h & Bow'ls	31	27	15	14	5	2	3	2	6		2	4	2	2	1			58
" Liver . .	2	4								3	1	1		1				6
" Peritoneum.	1	5								3	1	1	1					6
Jaundice . . .	2	4	2		1					1	1		1					6
Mortification of Bowels		1							1									1
Obstruction " .	1	1								1				1				2
Perforation " .	1								1									1
Scirrhus of Liver .		2								1	1							2
Softening of Stomach .	1		1															1
Strangulated Hernia .		1											1					1
Stricture of Esophagus.	1												1					1
Teething . . .		3	1	1	1													3
Tub'r affection of Abdom.		1											1					1
Ulceration of Bowels .	3	4		1		1			1	2	2							7
Worms . . .		1		1														1
	61	70	22	17	9	3	4	2	15	12	17	11	10	7	2			131

7. *The Urinary Organs.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110	Total.
Diabetes . .	1										1							1
Dissease of Kidneys .	2									2								2
" of Urinary Organs		1										1						1
Inflam. of Bladder .	3										1	1		1				3
" Kidneys .	1									1								1
	7	1								3	2	2		1				8

9. *Organs of Locomotion.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Abscess of Knee Joint .	1				1													1
Caries of Femur . .	1									1								1
" Spine . .		1			1													1
Disease of " . .		1						1										1
Gangrene of Foot .	1										1							1
Inflammation of Spine .	1							1										1
Injury of " .	1								1									1
Rheumatism . .		1									1							1
Spina Bifida . .		1	1															1
	5	4	1		2			2	1	1	2							9

10. *The Integumentary System.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Disease of Skin . .	1		1															1
Purpura Hemorrhagica		1			1													1
	1	1	1		1													2

11. *Old Age.*

Old Age . . .	16	19											1	13	14	7		35

12. *From External Causes.*

	Male.	Female.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Asphyxia	5	2	6								1							7
Burns	9	8	2	2	5	3		1	1	1		1	1					17
Casualties	29	4	1		2	3	2	1	11	5	2	3	2	1				33
Drowned	17					1		1	9	3	2		1					17
Fracture	2			1		1												2
" of Skull	1				1													1
" of Spine	1								1									1
Intemperance	13	7						1	3	9	4	2	1					20
Poisoning	1					1												1
Strangulation	1	2	1		1							1						3
Suffocation	1			1														1
	80	23	10	4	9	9	2	4	25	18	9	7	5	1				103
Still Born	68	49	117															117
Unknown	33	14	8	1	4	2		2	5	6	10	5	4					47

TABLE NO. 3.

Deaths for the Fourth Quarter of 1853, *at fifteen distinct periods of life.*

Under 1 year,	404
1 to 2	198
2 to 5	228
5 to 10	95
10 to 15	32
15 to 20	58
20 to 30	247
30 to 40	208
40 to 50	154
50 to 60	123
60 to 70	99
70 to 80	70
80 to 90	33
90 to 100	10
100 to 110	0
	1959
Still Born	117
Total,	2076

Embraced within the foregoing tables, were 146 from the Blockley Alms House, 114 persons of color, and 19 from the country, as follows:

	October.	November.	December.	Total.
Almshouse,	61	51	34	146
Blacks,	40	43	31	114
Country,	7	7	5	19
Total,				279

SUMMARY OF DEATHS FOR THE WHOLE YEAR.

In preparing a general summary for 1853 we find the deaths, from all causes, to be 9744, a decrease under those of 1852 of 514, or 5 pr. ct., while it is well understood that our population has increased. This is an indication of the generally improved health of the city during the past year. The excess of deaths in 1852 over those for 1851, amounted to 13 pr. ct.

Estimating the population to be 415,000 the aggregate of deaths will give one in every 42½.

The average of deaths for each month is 812; for each week, 187½ and for each day 26½.

The highest mortality occurred in August, viz. 1235, equal to 40 deaths per day. The lowest was in May, 597. This augmentation of mortality in August, may be charged to convulsions, cholera infantum, dysentery and yellow fever, which latter disease prevailed in the vicinity of South street wharf.

While the total of deaths for the year has been 9744, the actual number who have died from accredited disease was only 8026. This may be explained by deducting 1718 deaths placed under the head of unknown, still born, external causes, old age, malformation and debility.

The deaths among the adult population, or those over 20 years amounted to 4697. Of children, or those under twenty, 5047.

During the first few years of life the rate of mortality is very high; 2150, or 22 pr. ct. of all the deaths took place within the first year. 4153, or 43 pr. ct. occurred before the fifth year. In the tenth decade of life, or over ninety, there were 38 deaths recorded, and 2 over one hundred years of age. These calculations include the still born, which amounted to 565.

The subjoined statement shows the total of deaths for 1853 in their classified order.

	Males.	Females.	Total.
1. *Endemic and contagious diseases,* Zymotic or Epidemic,	1287	1135	2422
2. *Uncertain, or General Seat,* Sporadic diseases,	677	622	1299
3. Nervous system,	917	697	1614
4. Organs of Respiration,	1020	1057	2077
5. " Circulation,	102	107	209
6. " Digestion,	310	299	609
7. " Urinary,	30	10	40
8. " Generation,	2	99	101
9. " Locomotion,	20	25	45
10. Integumentary system,	13	7	20
11. Old Age,	54	79	133
12. External Causes,	277	119	396
Still Born,	324	241	565
Unknown,	132	82	214
	5165	4579	9744

By this analytical arrangement, we learn at a single glance the mortality from diseases, epidemic or sporadic in their character, or those implicating particular organs of the body, or those from external and other causes for the termination of life.

As in former vital statistics, this table makes the excess of deaths on the side of the males; equal this year to 11 pr. ct. In 1852 it was 13 per cent. In the "still born," the excess of males is 26 per ct.; in 1852 it was 30 per ct.

The deaths from the classes "zymotic," "sporadic," "nervous system" and the "organs of respiration" hold a conspicuous place in the above table. The first contributes 25 pr. ct.; the second, 13 pr. ct.; the third, or nervous system, 16 pr. ct., and the organs of respiration 21 pr. ct. of the mortality.

Consumption of the lungs numbers 1246 among its victims, being an increase of $3\frac{1}{2}$ pr. ct. above those of 1852. This large amount exceeds by far those of any other disease in the catalogue, and gives one out of every $7\frac{3}{4}$ deaths during the year. Equal to 12 pr. ct. of the whole number. It does not appear to confine its ravages to any one particular period of the year, nor is any decade of life exempt from its attack. According to the record, both infancy and old age come within its range. Seventeen deaths under one year of age are charged to its account, while four, over eighty, have been caused by its resistless power. As heretofore observed, it seeks its prey at the most interesting and favorable period of human existence, between twenty and thirty.

During 1853, it carried off in this decade 403, nearly one third of the whole number recorded. The excess of deaths was among females.

The annexed table furnishes a synopsis of the diseases which have been most fatal, and hence most prevalent for six consecutive years in this city.

	1848.	1849.	1850.	1851.	1852.	1853.
Cholera Infantum,	454	582	505	397	329	398
Consumption of the Lungs,	965	939	907	881	1204	1246
Congestion of the Brain,	85	91	97	130	120	172
Convulsions,	401	415	444	479	499	543
Croup,	177	130	143	180	208	303
Diarrhœa,	122	225	208	157	156	130
Dropsy of the Brain,	220	237	283	245	247	192
Dysentery,	315	578	421	401	558	379
Inflammation of the Brain,	186	198	218	202	258	157
" Bronchiæ,	172	169	191	175	208	197
" Lungs,	265	273	352	352	444	353
Marasmus,	237	264	217	255	354	376
Scarlet Fever,	172	242	439	400	433	391
Small Pox,	100	152	40	216	426	52

On the Treatment of Inflammatory Rheumatism. By O. C. Gibbs, M. D., of Perry, Lake County, Ohio.

The present is, emphatically, the age of improvement in therapeutic science. Yet, in the enthusiasm for things which are new, our profession is, perhaps, too apt to adopt newly suggested remedial means, frequently to the neglect of those honored by time and the support of worthy names. This is certainly more laudable than the opposite extreme, that of clinging to the doctrines and practices in which we were first educated, regardless of the pathological or therapeutic improvements of the age, but, nevertheless, is reprehensible, if lacking due consideration in reference to comparative merit.

New theories in regard to the nature, and new plans in reference to the treatment of inflammatory rheumatism, have followed each other in rapid succession, and been supported by a nearly equal array of names. In reference to remedies, blood letting, purgatives, calomel, tartar-emetic, opium, nitre, colchicum, guaiac, quinia, phosphate of ammonia, carbonate of potassa and soda, and lastly, lemon-juice, have each had their advocates.

In view of this discrepancy of therapeutic opinion, Prof. Wood,

of Philadelphia, whose opinions, in our humble judgment, are always worthy of consideration, advises blood letting, purgatives, and refrigerant diaphoretics. If the disease is not subdued in *two weeks*, calomel with opium is advised; and, in adynamic conditions of the system, quinia.

In our limited experience with this disease, we have tried several plans of treatment, and, so far, have found none worthy of comparison with that first suggested by Dr. Chambers and published by Dr. Hope, nearly twenty years ago.

The plan consists, as our readers are doubtless well aware, in venesection, if necessary, followed by eight or ten grains of calomel and one and a half grains of opium, for an adult, at bed-time; and, in the morning, by a strong black dose, sufficient to secure four or five stools. This night and morning medication, is to be continued until a cure is effected, excepting the calomel, which is to be discontinued when the symptoms considerably abate, or the gums become at all tender. With this treatment is conjoined, thrice a day, a saline draught, containing five grains of Dover's powder, and fifteen or twenty minims of wine of colchicum.

Under this treatment, early commenced, we have never seen endo- or peri-cardiac complication, or known a case to protract more than ten days. Perhaps, from our limited observation, we have placed too high an estimate upon the success of this plan, and it is only because we think some modern authors have estimated it too low, that we make these remarks.

It is due to Dr. Owen Reese, to say that lemon-juice has never been tried by us, as suggested by him.

From our cases we select the two following, illustrative of this plan of treatment.

Case 1st.—February 1st., 1850, was called to see Jane T——, aged five years; had been ill one day; the left shoulder was considerably swollen, very red and painful; the right shoulder was slightly affected. Her father died from some cardiac disease; had previously been much afflicted with rheumatism, and, for the last few years of life, almost helplessly so.

Three grains of calomel and five of Dover's powder were ordered at bed-time, to be followed, in the morning, by a sufficient black dose to secure a free cathartic action; a powder composed of three grains each of powdered colchicum and Dover's powder, was

ordered to be taken two hours after the black dose, to be repeated every four hours through the day.

This treatment was continued until the third day, when the calomel was omitted, and the powders ordered every six hours instead of four. On the fifth day the patient was discharged cured.

CASE 2d.—December 4th, 1851, was called to see Mr. E——, aged forty five years; had been troubled with rheumatism for several weeks, and had been treated by a Thompsonian with colchicum, Dover's powder, &c. The knees and ankles had been the seat of disease, affecting each limb singly and alternately. When first seen by us, the left knee and ankle were considerably swollen and painful, with but little redness and fever; the patient was not confined to the house, though unable to attend to business.

The disease was evidently subacute or chronic, and the plan of treatment proposed by Dr. Budd, in the London *Lancet*, was adopted.

The following was advised: five grains of bicarbonate of potassa and two grains of iodide of potassium, dissolved in an ounce of water, three times a day, and five grains extract colocynth at bed-time; with alkaline lotions to the affected joints. A milk diet, and a daily warm bath were also enjoined. This treatment was continued for two weeks without benefit.

Thirty grains of acetate of potash, in camphor mixture, every four hours through the day; four grains of quinia, in a pill, three times a day; and ten grains of Dover's powder at bed-time, the bowels to be opened with calomel and colocynth, when necessary, were now ordered, as recommended by Dr. Golding Bird, of London. This treatment was continued for two weeks, also without benefit.

The plan suggested by Dr. Chambers, as given above, was now adopted, excepting the venesection. Eight grains of calomel and one of opium, was given every night, followed by black dose in the morning, and twenty drops of wine of colchicum with five grains of Dover's powder, in saline draught, three times a day.

The patient rapidly convalesced, and was discharged, cured, on the seventh day from the commencement of this treatment.

Dr. Watson says he never saw but one case of inflammatory

rheumatism, occurring before puberty, uncomplicated with cardiac disease. The first case given here, though the patient was quite young, was entirely exempt from such complications.

On the Behavior of Alcohol in the Animal Organism. By Dr. DUCHECK. (Prag. Vjhrschr., X. 3, 1853.)

(Translated for the Examiner.)

There are now six kinds of alcohol well known, the æthyl, methyl, amyl, and acryle alcohols, the cetyle and the glyceryle. To each of these alcohols, possessing the general formula (C_nH_x+O+HO), there is a corresponding aldehyde (($C_nH_x—H_2$)+O+HO) which differs from the alcohol by possessing two equiv. less of hydrogen; and also a group of characteristic acids having the formula ($C_nH_x—H_2+O_3+HO$). Each of these acids contains two equiv. more of oxygen than its corresponding aldehyde. To the æthyl-alcohol belong the acetal-aldehyde and the acetic acid; to the methyl-alcohol, the formic aldehyde and the formic acid; to the amyl-alcohol, the amyl aldhyde and the valerianic acid, &c., &c.

In order to change the alcohol into aldehyde, two equivalents of oxygen are absorbed, forming two equivalents of water, then the aldehyd again absorbs two equivalents more, forming water and acetic acid.

Alcohol $C_4H_6O_2+O_2=2HO+C_4H_4O_2$ aldehyde.

Aldehyde $C_4H_4O_2+O_2=2HO+C_4H_3O_3$ acetic acid.

The process of oxidation, however, does not end here:

Acetic acid $C_4H_3O_3+O=HO+2C_2HO_3$ formic acid.

Formic acid $C_2HO_3+O=HO+C_2O_3$ oxalic acid.

Oxalic acid $C_2O_3+O=2C\ O_2$, carbonic acid.

It is apparent from this, that the process of the transformations of alcohol takes place by the continued absorption of oxygen, whereby finally water and carbonic acid are formed. The process of oxidation in the other kinds of alcohol is the same as in the æthyl alcohol.

The author, by means of a stomach pump, introduced into the stomachs of three dogs large quantities of absolute alcohol (from half ℥ to 60 grammes,) partly pure and partly diluted; he also injected into the rectum of a fourth dog 1½ ʒ of fusel oil diluted

with water. The phenomena exhibited in all the four cases were, 1. Intoxication more or less strong, and death sooner or later, according to the quantity of alcohol introduced, and to the slow or rapid manner of administration. 2. These phenomena occurred in the same manner whether the alcohol had been introduced into the stomach or the rectum. 3. The blood appeared somewhat darker, was of an alkaline reaction, and was distinguished by an odor like aldehyde, that was diffused through all the organs. 4. In two cases aldehyde was detected in the blood; while 5th, no further product of oxidation of the same was found. 6. Alcohol was not once detected in the blood. 7. The stomach, even a short time after the introduction of alcohol, contained only a very small amount of it. 8. The urine, as well as the fluid in the cerebral ventricles, exhibited a peculiar but evanescent odor of ether. 9. No important anatomical change existed in any of the organs. 10. The action of amyl-alcohol appeared far more decided than that of the æthyl-alcohol. From these facts it follows: that the alcohol becomes absorbed and chemically changed, and that these two actions occur so rapidly, that even after a very short time we can only detect the aldehyde. The impossibility of detecting alcohol in the blood is opposed to the prevailing view, that alcohol in an unchanged atomic combination remains for a short time in the blood. This view rests upon the observation that, after the use of a large quantity of spirituous liquors, the breath is charged with a kind of alcoholic odor, or rather that peculiar to the drink that has been taken; and also that in the opening of the bodies of those who have suddenly died, an odor of alcohol is diffused from the inner organs. These cases, the author considers, are all founded upon incorrect observation. In dissection the odor of alcohol is confounded with that of aldehyde, and as for the breath, it carries along with it, besides the peculiar pulmonary exhalations, that portion of the liquor that remains in the form of vapor in the cavities of the mouth and throat. Other substances besides aldehyde are contained in the breath, and exhaled undecomposed at the same time, such as the peculiar aromas of the various liquors, which can be distinguished from the pulmonary exhalations. They originate from the various substances associated with the alcohol, viz., the different kinds of ether; the œnanthic ether,

(from wine and cognac,) the butyric ether, from rum, and also ethereal oils, various acids, &c. The odors of these substances are generally characteristic of the specific drink, and they are identified with that of alcohol, and it is then assumed that this is exhaled, and therefore remains undecomposed in the blood. If it be granted that alcohol is oxydized in the system into aldehyde, then it must be admitted that this oxidation takes place either in the stomach or in the blood. Oxygen is, in every case, necessary to the transformation of the alcohol; in this respect, therefore, the formation of aldehyde meets with no impediment in these places. The change, however, cannot take place in the stomach, since, 1st, we can never detect the presence of aldehyde in it; and 2d, since the conditions requisite to the formation of aldehyde in the stomach are the same as in atmospheric air, the change of the alcohol in the stomach taking place slowly, as when exposing a large amount of it to the atmosphere, so that intoxication would occur much later. This view will finally appear untenable, if we but consider that intoxication, consequently the formation of aldehyde, occurs equally if the alcohol be introduced into the rectum, whose cavity, as is well known, contains no oxygen. If now the alcohol remains unchanged in the stomach, its transformation must necessarily take place in the blood. The question arises, how does the alcohol enter the blood? Many experiments which the author made of the penetrability of the membranes (hog's bladder) to alcohol and aldehyde, place it beyond doubt that the walls of the stomach can be penetrated by the alcohol, and thus be taken up by the vessels. Another question now arises; does the transformation of the alcohol take place after it has been carried unchanged to a remote part of the body, or immediately after its absorption by the blood vessels? Several facts are opposed to the first supposition. Whenever alcohol in great amount comes in contact with blood, coagulation necessarily occurs. This is proved by the daily experience and unsuccessful attempts of earlier experimenters, who have studied its action whilst injecting alcohol in the veins. Such coagulation will then occur if, as in the first three experiments of the author, a great quantity of alcohol penetrates through the walls of the stomach without oxydizing, that is to say, without becoming changed into aldehyde. And yet in the bodies of men

or animals that have suddenly died from intoxication, there has never been found any trace of coagulation, that had taken place during life. Experiments show that only a very large amount of aldehyde, introduced rapidly and in an undiluted condition into the veins, can produce coagulation; that this, therefore, never takes place when introduced slowly in small quantities and tolerably diluted. From this, therefore, we conclude, that alcohol only after it has been changed into aldehyde can remain any length of time in the blood. Besides the rapid penetration of aldehyde into all the tissues even in one or two minutes, can be more readily explained by its greater capacity of imbibition, than by assuming the same of alcohol, and supposing the change into aldehyde to take place only after the imbibition of the former into the organs.

These reasons and the impossibility of chemically detecting alcohol in the blood, make it probable that the alcohol enters only the absorbent vessels, and that on the appearance of even the smallest amount in the interior of these, oxidation immediately follows. This view of the rapid formation of aldehyde is supported by the large surface and fine porous condition of the walls of the stomach. Since then it is assumed that intoxication is not produced by the action of alcohol upon the stomach, it must therefore commence with the formation of aldehyde and this consequently must be the intoxicating principle. The author to prove this, injected into the veins of three and into the stomach of two dogs, aldehyde partly diluted and partly undiluted. He obtained these results. 1. That aldehyde introduced into the venous blood or stomach, produces the same violent symptoms of intoxication as if alcohol were used. 2. The sudden introduction of a large amount of aldehyde into a blood vessel, produced mechanical coagulation of the blood. 3. After the passing off of the narcotic effect, acetic and oxalic acids were found in the blood; from this it appears that aldehyde is fitted for excretion by the absorption of oxygen. 4. If there is at any one moment a large amount of aldehyde in the blood, a portion of it can be thrown off unchanged, with the exhalations from the lungs. Hence arises the odor of the breath, that has been confounded with that of alcohol. This symptom only appeared when a great amount of aldehyde had been rapidly injected. The lengthened respira-

tion, indicated the necessity for oxygen, the animal heat appeared to keep parallel with the increased process of combustion.

If it now be granted that intoxication commences with the formation of aldehyde, it may be asked whether it ends with its disappearance from the blood, or whether the symptoms of intoxication are connected with the presence of the further process of oxydation, acetic acid, &c. The author's experiments show that acetic acid is never present in the blood of animals that have died during intoxication, although it has been found after this has passed off. Besides, the author made the direct experiment of injecting dilute acetic acid into the veins of a dog—no narcotic effects followed. These facts lead to the conclusion that the period of intoxication is limited to the disappearance of the aldehyde, that is to say, to its conversion into acetic acid. Consequently the above stated view, that intoxication is due properly only to the aldehyde receives further confirmation. In two experiments oxalic acid was found in the blood, as a further product of the oxidation of alcohol. The ultimate products of this continued oxidation must of course be carbonic acid and water. For the determination of carbonic acid and water, in the pulmonary exhalations, after the use of alcohol, the author made three experiments upon dogs, in which at the same time, the amount of expired air, the animal heat, the number of respirations, and arterial pulsations were taken into account. He obtained the following results: 1. After the use of alcohol more air is inhaled, indicating an increased necessity for oxygen. 2. In the expired air is found (with equal amount and equal number of inspirations) *less carbonic acid and less water* in the pulmonary exhalations. (A result which Vierordt and Böcker also obtained.) 3. The number of respirations and arterial pulsations, together with the animal heat, consequently the process of oxidation, were greatly augmented.

When the process of alcoholic combustion by the continued absorption of oxygen takes place, the blood is in this way deprived of a great amount of oxygen, which would otherwise be applied to the combustion of other substances. The blood therefore must undergo a change, and the normal course of metamorphoses be impeded; and the quantity of the final products—carbonic acid and water—also must vary. In the normal condition

(besides other substances) grape sugar is consumed in the blood, and its transformations into carbonic acid and water depend upon oxidation, a process of great importance to respiration and the generation of heat. If a substance though, like aldehyde, enters the blood, making energetic demands upon oxygen, and generally having a greater affinity for it than sugar has, then the *latter must in greater or less amount remain unconsumed*, at least for a time. That this actually takes place, the author proves by his investigations of cases of sudden death by alcohol and aldehyde, as well as by long continued use of alcohol, in which cases, he always found a large quantity of sugar in the blood, and, indeed, larger than in the blood of two dogs drawn in the course of the experiment, *before* the first intoxication. If alcohol ($C_4 H_6 O_2$) is burnt, the proportion of carbonic acid to water is as 4 : 6 or 1 : $1\frac{1}{2}$; in the combustion of sugar ($C_{12} H_{12} O_2$) as 1 : 1. In the first case therefore there is more water and less carbonic acid formed. If now, whilst using alcohol, it alone is consumed, the sugar remaining unchanged in the blood, then the proportion of carbonic acid to water that is expired, is changed, and this is the reason why *after the use of alcohol* less carbonic acid is expired. Concerning the second product of combustion—water—in spite of its outweighing the carbonic acid, its amounts are very inconsiderable. Since now the kidneys are especially designed for the secretion of water, then it is evident why its amount is greatly decreased in the exhalations from the lungs. That a great part of the water passes off into the urine is shown by the great increase of the latter after the use of spirituous liquors, as well as by the peculiar kind of ethereal odor in it, which can be produced though, only by the secretion of a yet unknown secondary product of the alcoholic combustion, which with the water is carried off also by the kidneys. The question now arises: During the general combustion of aldehyde, what is the behavior of the remaining blood in the body, whose metamorphosis into carbonic acid and water are so retarded? The retarding of oxidation affects principally the sugar. If this is not consumed, it must finally either be accumulated in the blood, or be ejected as such (diabetes) with the excrement, or it must undergo some other kind of transformation. We cannot imagine an accumulation of sugar to remain for any length of time in the blood; the author

never found it in the urine of any animals experimented upon, it must undergo consequently some other transformation. In relation to the appearance of milituria,the author begged attention to the fact, that many had declared that diabetes was frequently found among drunkards, and considered it possible that, in such cases, it was induced by the above mentioned causes.

The further metamorphosis of sugar is, however, most important. If it is not tranformed into carbonic acid and water, it must change into fat, to which probably the excess of oxygen breathed, is applied. Herein doubtless lies the cause of the excessive formation of fat among drunkards.

To what extent the transformation of the nitrogenous substances suffers from the superior oxidation of aldehyde in the blood is unknown; it may, however, be analogous to what has been previously stated in regard to sugar—the retarding of the metamorphosis, or what is more probable, a change in the nature of the constituents. The principal action of aldehyde upon the blood is generally, therefore, the withdrawal of its oxygen. Its existence is, however, not always indicated by this, but by the rapid action of the processes; the alcohol rapidly oxidizing into aldehyde, and this more readily than other substances, withdrawing rapidly a large amount of oxygen. This probably soon becomes balanced by the increased respiration from the necessity for oxygen; as was observed by the author in his experiments and as is known in life. During intoxication purer air is requisite; therefore in cold climates or in winter a larger amount of alcohol can be taken than in warm climates or in summer. It seems therefore that the rapid absorption of oxygen performs here another part. Those bodies which act in the same or somewhat similar manner, which either absorb oxygen rapidly, or impede its access to other substances, exhibit similar actions. The breathing of carbonic acid and of hydrogen gas produces insensibility and sleep. The intoxicating effect of protoxide of nitrogen is known. The action of opium, on the contrary, can not be explained in the same manner. In opposition to these substances, bodies though of like or similar combination, which are incapable of being oxidized, show no action analogous to that of alcohol.

Of the alcohols, the æthyl, methyl and amyl-alcohols alone act similarly, possessing a like affinity for oxygen. The

æthal, a kind of fatty substance, which oxidizes slowly, acts on the contrary, indifferently on the organism, as the author proves by experiments. Acetic acid as above shown is also wanting in that intoxicating principle, though it must finally be removed from the system by further oxidation. It is therefore not improbable that the rapid withdrawal or the great want of oxygen is essentially the fundamental cause of *most* if not all the phenomena of intoxication. The trembling, the transient paralysis of the lower extremities—which we know to be the case with men, and which were not wanting in any of the author's experiments, cannot therefore depend immediately upon the chemical action of alcohol nor their disappearance upon the inhalation of much oxygen during intoxication, which was observed by the author in his experiments upon birds and dogs. Death, in consequence of the so called alcoholic poison, must occur, agreeably to the above, when with the presence of a great amount of aldehyde in the blood, there exists not at the same time a sufficient amount of oxygen to transform it into acetic acid.

To establish the phenomena that occur after *long continued use of alcohol*, the author instituted several experiments upon dogs. In order to obviate the difficult application of the stomach pump—and to prevent the fluid from getting into the windpipe from the restlessness of the animal—he used gelatin-capsules which contained each 5 grmms. of absolute alcohol. To a dog two years old, rather thin, and of small species, were daily given 15 grmms. of absolute alcohol, which was followed regularly by intoxication. Emaciation and weakness in the hinder limbs, occurred. Death in seventeen days and fourteen hours after the last dose. The blood contained many carbonates and much sugar. To a setter one year old, and well fed, first small, then large doses of alcohol (from 5 to 15 grmms.) until intoxication occurred, were given. Here also appeared weakness in the hinder limbs—emaciation not very great. Death in forty-three days and eight hours after the last dose. A weak odor of aldehyde from the inner organs and blood. The latter contained much sugar. To a small dog, corn brandy was daily given for seventy-two days, until intoxication occurred. The animal became rapidly emaciated, to which a cancerous tumor in the glands of the breast probably contributed. The symptoms of weakness in the hinder limbs

were also here apparent. The blood contained no sugar. To another young dog, corn brandy was given for thirty-two days. The same symptoms occurred. The blood contained much sugar. To a large setter, corn brandy was given daily for ninety-three days, from two to three spoonfuls. Upon this he became very fat, and was well, when on the above named day he was accidentally killed. The blood contained much sugar. There was much fat on the under skin of the cellular tissue, otherwise no anatomical change.

The anatomical dissection in the cases of sudden death by alcohol presents no change of any organ, of the brain or its membranes—in the lungs only were found a spurious œdema. Emaciation was shown in long continued habits of intoxication; in the brain though, no change, not even that thickening of the membranes and dropsy in the ventricles, quoted by Huss. In two cases there was blennorrhœa of the external auditory canals. The stomach and its membranes were, in opposition to others' account, always normal. Only in one case where but little amount of brandy had been taken was much fat found. In conclusion, the author abridged his obtained results, as follows:

1. Alcohol undergoes in the system continued combustion, of which the intermediate products are found in the blood.

2. Intoxication is dependent upon the existence of aldehyde in the blood.

3. The action of aldehyde upon the blood is the rapid withdrawal of its oxygen.

4. Therefore the combustion of other substances, consequently their metamorphoses, are prevented or retarded. — *Schmidt's Jahrbuch, October.*

On the Chemico-physiological Effects of Coffee.

By Julius Lehmann.

(Continued.)

After the conclusion of these investigations, I endeavored to discover the mode of action of empyreumatic oil upon the system. For this purpose I placed G. M. again upon the normal diet, then gave him, instead of water, the empyreumatic substance of coffee. To obtain this, I distilled a certain quantity of roasted

coffee beans with water, until the residue had lost all odor. The distillate possessed the precise taste and smell of the decoction. G. M. received four glasses of it daily, which contained the empyreumatic oil of two ounces of roasted coffee.

Investigation of the Urine after the use of the Empyrematic Oil of Coffee.

Date.	Cub. Cent. Urine.	Reaction.	Peculiar Properties.	Phosphoric Acid.	Chl. of Sodium.	Urea.
July.						
8	1526	acid.	wine yellow, clear.	4.250	8.676	26.647
9	1689	"	" "	4.321	10.303	26.910
10	1630	"	" "	3.718	9.325	23.025
11	1744	"	" "	3.528	12.356	21.840
12	1650	"	" "	3.486	8.730	19.536
13	1943	"	" "	3.402	10.641	19.800
14	1820	"	" "	3.501	9.501	19.771
	7157			13.917	41.228	80.947

The average per day was:—urine, 1789; phosphoric acid, 3.479; chloride of sodium, 10.307; urea, 20.271.

This produced a pleasant excitement and gentle perspiration, whilst, as was the case in using the decoction, the depressed feeling entirely passed away. The reason more than the imagination exhibited the stimulating effects of the oil, which fact was afterwards confirmed by several experiments. The watery contents of the urine increased, whilst the phosphoric acid, and more especially the urea, greatly decreased. It appeared to have no effect whatever upon the relative proportion of the chloride of sodium. The considerable decrease of the solid constituents proved that the oil retarded the metamorphosis to a greater degree than the caffein, and therefore to it particularly must be ascribed this peculiar action of the decoction. Congestion, profuse perspiration and sleeplessness were the consequences of a double dose of the distillate. It produced on two other persons who drank of it, besides the above effects, diarrhœa, thus showing that the increased peristaltic action must also be ascribed to it. If we now consider the results of all the investigations and experiments, we arrive at the conclusions:—

1st. That the use of the decoction of coffee produces two im-

portant actions in the system, which are difficult to harmonize; viz., stimulating the vascular and nervous system to greater activity, and at the same time considerably retarding the metamorphosis.

2d. That the stimulating effect above mentioned, so valuable to us from its reviving the wearied spirit, and disposing to thought and promoting a feeling of comfort and cheerfulness, is due to the opposing modifications of the action of empyreumatic oil and caffein.

3d. That the retarding of the metamorphosis is mainly due to the oil—the caffein showing this, *only* when it exists in large quantities.

4th. That increased activity of the heart, trembling, dizziness, delirium, intoxication, &c., are the effects of caffein.

5th. That the increased action of the perspiratory organs, of the kidneys, of the peristaltic action, and of the brain, are the effects of the empyreumatic oil.

If the decoction be too strong, that is to say, if it is prepared in such a way, as to contain too great a quanity of both substances for the system, then occur the effects peculiar to both, trembling, activity of the heart, congestion, &c., &c. If we consider these two chief actions of coffee, which are peculiar to some other substances, such as tea, cocoa, spirituous liquors, &c., though in a modified degree, we observe that they are at variance with the general law, that the greater the expenditure of mental and bodily activity, the greater the waste—or rather the metamorphosis of the system. Whether this excitement of the vascular nervous system, occasions more rapidly the destruction of the processes of life, or how these two opposing effects are to be explained, remains for the future to discover.

Concluding Observations.

One, who is familiar with the general law above mentioned, that an increase or decrease of mental and bodily expenditure, is attended by a proportionate increase or decrease of the metamorphosis, will find it difficult to comprehend the strength, busy life and good health of the poorer classes, when he considers these in connection with the very small amount of actual nourishment that they are able to obtain. And, in fact, the existence

of such persons would have been inconceivable, if no means of supporting their health and strength had been provided, beside that small amount of actual nourishment. Limited to that alone, there would have been a great disproportion between the amount received and that thrown off; the tissues must have suffered a continual waste, even to the dissolution of life. But instinct has taught them to make use of a substance, which is capable of making a too scanty nourishment sufficient to the system, and by preventing in this way the otherwise unavoidable disturbances of the balances of life.

It is particularly coffee, tea, cocoa, empyreumatic oils and alcoholic liquors that possess this peculiar influence upon the system, and most of these agree in producing that excitement of the nervous system of so great importance in social life.

If we now reflect upon the distribution of these substances, we find that one of them is used by the people as a common article of food, while the others are enjoyed by the higher classes as articles of luxury. In those countries where one or other of these substances is cultivated, its culture is considered as a matter of chief importance by the people; thus, in Arabia, coffee; in China, tea; in the wine producing countries, wine. On the contrary, where this is not the case, the choice has fallen almost exclusively on coffee or tea. The reason why the preference is given to these, particularly in Europe, is owing principally to the fact that they exert a far less injurious influence upon the system than alcoholic drinks, and also on account of their valuable action upon the nervous system from the united effects of coffee and empyreumatic oil. For while, by stimulating the reason and imagination, these prepare man for intellectual and bodily exertion; spirituous liquors, exciting only his imagination, which degenerates by slight excess into confusion of thought, cause, by irritating the nervous system, general debility. These latter therefore can be used with much less safety than coffee or tea.

An attentive consideration of the quality and quantity of the composition of coffee and tea, the various modes of preparing them, as well as their action upon the system in connection with the kind of food used, will probably account for the peculiar preferences of nations, for the one over the others. If the composition of tea leaves be compared with roasted coffee, we find that

they both possess those substances that are of such great importance—thein, etherial oil, and Protein substance. The only difference between them is, that the coffee contains an aromatic substance, and the tea a greater amount of thein, but especially of etherial oil. Three most important effects are produced by these constituents: 1. The retarding of metamorphosis produced by the thein; but more particularly by the aromatic substance in coffee. 2. The lengthened activity of the brain, produced by the special action of thein and etherial oil. 3. Serving as an actual means of nourishment, by the amount of protein substance contained in them. Coffee influences more directly the metamorphosis, and tea the nervous system. In order to obtain completely these effects of the two drinks, they must be partaken of in substance. This occurs, however, only among few nations, and is probably dependent upon the kind of food used and their mode of life. The Orientals and Arabs regard coffee as a necessary article of food, and from their custom of drinking it with the dregs, thus making the large amount of Protein substance and inorganic constituents serve as nourishment, have unconsciously rendered their very frugal diet less sensible to them. If the plastic ingredients are not of themselves sufficient, yet here comes to their assistance the indirect nourishing property of caffein and the aromatic substance—equalizing their necessities, and at the same time exciting their nervous system.

The Central Asiatic inhabitants of the Steppes, the Buratians, the Mongolians, &c., &c., make use of tea as a common article of food. They prepare it, first, by rubbing the leaves together, then boiling it in water, adding a little salt to it; after they have poured off the decoction from the dregs, they add to it butter and milk, and meal if they have any, which they roast before adding to the decoction. A person takes per day from 20 to 40 cups. But even without meal, and only with a little milk, this tea often serves for weeks long, as the only means of nourishment. We see here again a people instinctively directed, as it were, in the peculiar mode of preparing tea; unconsciously adding those substances which are of such great importance, viz. the protein, that become soluble by boiling in salt water, and also a great portion of the inorganic constituents. It is probably here the large amount of thein that influences the metamorphosis.

Of course they lose entirely the valuable property of the united action of etherial oil and thein, since by boiling the former is dissipated. This could better be spared though than the other action of tea, which serves as a direct nourishment, which is of greater importance.

The mode of preparing these drinks among Europeans, is very different—not placing much value upon the nutritive substances contained in them, but merely upon those which are capable, indirectly, of nourishing, and those which induce greater activity of the nervous system and the brain. The mode of preparing coffee among the Germans, enables them to obtain, besides the empyreumatic oil, as much caffein as they can possibly obtain from it; while in the preparation of tea, less attention is paid to the amount of thëin, than to the etherial oil—the whole amount of which passes over to the decoction. Hence, with them, tea acts only as a stimulus to their brain and nervous system, whilst coffee retards the metamorphoses, and, also, though not in so great a degree as tea, stimulates the nerves. The English, who produce so much meat in their own country, and can generally obtain so much of it that it is even possible for the poorer classes to partake of it daily, besides the Protein substances, have less need to prepare their coffee in such a manner as to obtain from it indirect nourishment. Since, however, they feel the want of spirits and excitement, their choice has fallen upon tea, which promotes these better than coffee.

We find among the poorer classes of Germany, where meat is so rare and considered so great a luxury, that they are obliged to substitute for it such poor food as potatoes, &c., which consist of substances which indeed satisfy their hunger, but yet are not fitted to prepare them for very great exertions. The feeling of mental and physical lethargy experienced by them, and produced by this spare diet, becomes much more evident if they suffer from the want of coffee. The rapid diffusion and yearly increase of the consumption of coffee, is an evidence of the great importance it has attained in social life.

Whilst, at the beginning of the last century, it was considered a luxury by the higher classes, it has now become a necessary article to all classes, wherever food is scarce and dear. Of its total production, which amounts annually to 600,000,000 of pounds, two

thirds are consumed by the Europeans, whose exertions appear so disproportioned to the actual means of nourishment. In the Zollverien States of Germany, the consumption of it amounted, in 1851, to one hundred millions of pounds, or one sixth of the total production. Upon each reduction of duty, millions of pounds more were consumed by the people. The consumption of coffee and potatoes, from the period of their general introduction, have gone hand in hand. We see the poor instinctively valuing coffee more, the more they are limited to potatoes as their chief food.

The Substitute (Surrogate) for Coffee.

At the time of the continental embargo, the want of coffee was felt for the first time in Germany, and the necessity of possessing some such drink, led to the adoption of other substances produced there, to which, by roasting, a taste similar to that of coffee could be imparted. Notwithstanding the general introduction of coffee again, and its greatly increased production in the colonies, and the reduction of duty, which naturally made it cheaper, the consumption of the substitute was not lessened, but increased so as yearly to amount to 100,000 cwt. The opinion that Knapp, as well as other authors have started, that this substitute is entirely deficient in those substances, so valuable to the poorer classes, can be refuted if we examine its composition, and remove the idea that caffein is the only efficacious substance in coffee. The materials which they have chosen as substitutes, and which may be increased indefinitely, all undergo the same process as coffee, viz., roasting; by which the aromatic substance is evolved, and by which is effected that retardation of the metamorphoses of such great importance to the poorer classes. The roasting thus produces not only a taste similar to coffee, but also imparts to it one of its most important properties. Still we cannot be indifferent to the great deficiency that exists in the substitute; viz., the total absence of caffein, thus losing that valuable influence upon the vascular and nervous system and upon the brain. Since, however, Surrogate is about from five to eight times cheaper than coffee, and possesses a part of the peculiar action of the latter, we cannot wonder at its having attained, among the poor, to such a general use.—*Annal. der Chemie und Pharm., September* 1853.

BIBLIOGRAPHICAL NOTICES.

A Treatise on the Diseases of the Eye. By W. LAWRENCE, F. R.S., Surgeon Extraordinary to the Queen, &c., &c. *A New Edition. Edited with numerous additions, and two hundred and forty three illustrations, by* ISAAC HAYS, M. D., Surgeon to Wills Hospital; &c., &c. Philadelphia. Lea & Blanchard. 1854.

Notwithstanding the interest and importance attached to this class of diseases, and the frequency with which these affections occur, but few American treatises on Ophthalmic Medicine and Surgery have ever been offered to the public.

The Manual of Diseases of the Eye, by Dr. Littell, Surgeon to Wills Hospital, very deservedly has an extensive circulation in this country, and has been reprinted in England; with this exception, and a small work of Dr. Frick, we are entirely dependent upon British authorities for study and reference, and are therefore much gratified in being able to announce the reprint of such works as those of Walton and of Lawrence; especially when brought out under such favorable auspices.

Lawrence's book has reached a third edition in this country, and only a second in England, a fact, which, of itself, indicates the estimation of the author's labors, on this side of the Atlantic.

The American Editor has availed himself of all the recent discoveries and improvements in this department of surgery, and has added more than one hundred pages of new matter to the work.

The introductory chapter, which treats of the anatomy of the eye, has been considerably enlarged by additions from various modern authorities, and more particularly from a little work of Bowman's, a volume of great value to all who are interested in this department; from it has been taken many beautiful illustrations, elucidating minute and microscopic structures which have not appeared in any other publication.

A correct knowledge of the structure of the eye is of course the only proper basis for the study of its diseases; modern pathology, however, demands not only a mere general anatomical

knowledge, but also a familiarity with the microscopic appearances of tissues, both in their normal and abnormal conditions; and this can only be obtained by practical investigations, or from the researches of able histologists.

In the subsequent chapters, Dr. Hays has given the reader the benefit of his experience and of his own views upon many topics, and has also shown great industry and research in collating, from various sources, all that is new and valuable on the subject. We may take for example the chapter on cataract, to which he has given increased value by his additions upon "Diagnosis by Catoptric Examinations," "Pathology of Cataract," "Propriety of Operating when one Eye only is Affected," "Importance of Preparatory and After Treatment," "Objection to the Operation of Depression," "Additional Remarks on the Operation by Absorption," "The Mode of Operating with Jacob's Needle," "Operation by Suction," "Diagnosis of Congenital Cataract," "Methods of Operating for," &c., &c.

In speaking of the pathology of congenital cataract, he gives the following:

"The crystalline lens is entirely devoid of vessels, and nutrition is accomplished in it, as in some of the lower orders of animals, by imbibition, or endosmose. During the early period of fœtal existence, the lens is opaque, and its capsule at the same period is vascular. From some cause, probably inflammation, which results in a deposit of lymph in the capsule, the structure of this membrane is altered, and its function, that of endosmose, impaired or arrested. Hence results an arrest of development of the lens, as this part is dependent for its nutrition on the integrity of its capsules. That this is the true view of the subject, is shown by the condition of the parts in congenital cataract. If examined soon after birth, the capsule will be found thickened by effused lymph, and the lens small. Such has been the case in every instance in which we have operated within a short period after birth. At a later period of life, a somewhat different condition is observed. The nutrition of the lens being arrested by the alteration of structure of its capsule, that body undergoes a deterioration, becomes softened and disintegrated; and, if the operation be performed towards the period of adolescence, either only a milky fluid containing some debris of the lens, with a thickened capsule, is found, or else this last is empty, and its two surfaces are in contact, forming a dense opaque membrane which it is difficult to cut with a needle, and is often insusceptible of being absorbed. Sometimes the intra-uterine inflammation of the capsule is very limited, and a single spot of lymph only is deposited on it, which does not effect the function of the membrane, or materially impair vision. In other instances,

numerous opaque patches are formed, which in some rare cases, Mr. Dalrymple states, present a hard, bony or earthy surface."

After a full account of the various modes of operating for cataract by extraction, depression, and solution, the editor expresses himself as decidedly in favor of the last operation, and says:

"This operation is the one usually performed at Wills Hospital by the editor and his colleagues, and the results have been remarkably satisfactory. It is applicable, we are convinced from ample experience, to a larger number of cases than has usually been supposed, and may be successfully resorted to even in hard cataracts, by adopting the mode of operating to this condition of the lens.

This operation has the great advantage over extraction and depression, that it is far less liable to be followed by destructive inflammation; indeed in healthy individuals, when the operation is well performed, the patient suitably prepared, and proper precautions subsequently taken, the risk from inflammation is exceedingly small. It has also been urged in favor of this operation, that little manual dexterity is required for its performance. This may be true, in comparison to that required for extraction; but we protest against the inference. The merest bungler may perform it, nay, I have seen them do so and sometimes with success. But what would be the result of a large number of their operations? assuredly disastrous in a great proportion. To perform this operation well, requires skill, experience, coolness, and judgment. No one should attempt it, until he has studied well the relations of the parts involved, and has fully considered all the difficulties he may encounter, and is prepared to obviate them."

Much of the success of this operation, will depend on the surgeon keeping in mind that the capsule must be *cut;* and that in order to cut it the needle should have a knife edge. Dr. Hays recommends a needle, which we have no doubt is a valuable one, for in the first place it is short, and in the next, it has a cutting edge.

"For the proper performance of this operation, a needle, with a very keen cutting edge, is requisite. We have found it so difficult to have such an edge made on the ordinary shaped needle, that we have had an instrument especially constructed for the purpose, which contains both the advantages of a knife and a needle. This needle much resembles the ordinary iris-knife. The back is beveled, the bevel extending to one fourth of the width of the blade; the remaining three fourths constitute a knife edge. The point is made very acute, and the cutting edge extends a little over four lines from the point; below this, it gradually terminates in a round needle shank. The point is prolonged from the thickest portion of the blade, and is made to cut on both edges; below this the back is merely thined or rolled off. The whole length of the needle is about seven lines."

We might suggest an improvement upon this needle, based upon a well-known principle, viz., that straight edged instruments are much more easily sharpened than any other. Instead of having it middle-pointed, let its point be in the line of its edge, and in other respects made as directed above.

The length of this needle we would especially recommend, and believe that the preference at Wills Hospital has always been in favor of a short needle, and to this fact may, in some measure, be attributed the successful results of the operation in that institution.

There is scarcely any chapter in which we could not point out the additions and suggestions of the Editor which materially enhance the value of the book; especially should we like to bring before the reader the Editor's operations for strabismus and artificial pupil, which have justly entitled him to a high position as an ingenious operator.

But instead of dwelling longer on the general merits of the book, and its striking points of interest, we would advise a purchase of the same, to those at least, who wish a standard work on Diseases of the Eye.

The illustrations and printing are very creditable to the Publishers.

Chemistry and Metallurgy, as Applied to the Study and Practice of Dental Surgery. By A. Snowden Piggott, M. D., late Professor of Anatomy and Physiology in the Washington University of Baltimore. Lindsay & Blakiston. Philadelphia.

To treat a subject properly, with a due sense of its importance, not to fall into the error of too great conciseness on the one hand, nor into that of excessive redundance on the other, requires much judgment and discrimination. This latter mistake, the learned and full writer is, of all others, the most apt to commit, and particularly when the topic which he discusses is, from its nature, limited in its range. From an eager desire to elevate and extend what he esteems of so much value, all sources of observation and every collateral aid which can possibly be pressed into service, even where there is but little affinity between those and the main subject, are eagerly seized upon, and what, under

a more proper mode of treatment, could have been soon dismissed, becomes so bulky as to require a volume to contain it.

Dr. Piggott's book, admirable as it is in many respects, partakes, in our opinion, very largely of this latter fault. As evidence of this, we need only remark that nearly one third of its contents is devoted to the chemistry of the human body and to digestion. Now considering that the application of his book, is to the *study* and *practice* of dental surgery, we cannot well see why there is associated with its useful and practical departments, matter of which the connexion is exceedingly slight and not very apparent. With quite as much reason, he might have commenced with a treatise on the anatomy and physiology of the human system. Such a mode of treating a subject, irresistibly reminds us of Diedrich Knickerbocker's History of New York, in which, to show the immense importance of his topic, he begins at the creation of the world.

Besides the fact that the first two divisions above mentioned are entirely uncalled for, we think, if it was thought proper to publish them at all, it would have shown more judgment in the writer to have preceded them with a few chapters on elementary organic chemistry. As they stand, they presume a much more intimate acquaintance with that science, than, we fear, is generally possessed by the class for which they are intended. In this opinion, we hope we are mistaken. To give our readers an opportunity of judging, however, and as a specimen, also, of the matter given us, we shall quote the first passage we light upon in turning over the leaves. It happens to be this: "*Amides* are also formed from the ammonia-salts, by the loss of an atom of water; $H_3N.C_4H_3O_3 = H_2N.C_4H_3O_2 + HO$. The substitution theory is inapplicable to these changes. The amides are solid, crystallizable, colorless, indifferent, volatile substances. Treated with nitrous acid, they are converted into acids with the development of ammonia.

When the amides of these acids are treated with anhydrous phosphoric acid, they lose water, and nitriles remain, which contain the radicle of the acid, and one equivalent of nitrogen in place of three of oxygen. Thus *butyramide* and phosphoric acid form hydrated acid and *butyronitrile.*"

We forbear adding the chemical formula given; it is a long and tough one, which each of our readers can, as an exercise, work out for himself.

The book has four divisions. In the 1st, after describing the ultimate and proximate elements of the human body, we have a division of its substances into the two classes of azotized and non-azotized. The azotized is subdivided into exereted and histogenetic substances, which latter are treated of, under the heads of albuminous and gelatinous groups. Following these, we have described the nitrogenous basic bodies, which are not histogenetic; the non-nitrogenous acids, the haloids, the non-nitrogenous neutral bodies, and, finally, the animal pigments.

Under the 2nd head "Digestion," we have a chapter on its physiological relations, one on food, one on gastric and one on intestinal digestion, containing a description of the different secretions; as bile, pancreatic juice, intestinal juice and contents of intestinal canal and excrements.

In the third division, under the title of the chemistry of the mouth, we have an article on the teeth, with analyses of its different structures: a very full and satisfactory chapter on the saliva; one on the morbid changes of the same fluid; one on mucus and one on salivary calculi. The 4th division is devoted to the chemistry and metallurgy of the metals and earths used by dentists. In this the largest portion of the book, are described the blow-pipe and other modes of applying heat, as furnaces &c.: minute details upon the working and refining of metals used by dentists; valuable tables of gold and silver coins of different nations, all concluded by a chemical history of the materials used in, and the different methods of making incorruptible teeth.

Putting aside our objections, stated above, to the 1st and 2d. divisions, we think it but fair to state that they are extremely well written and in strict accordance with the views entertained by the latest and most reliable writers upon the subject. We cannot too highly commend the remaining portions of the work. They contain, collected from various sources and from the author's own observations, a large amount of curious and practical information, and from their intrinsic value, deserve and should command a prominent position in the library of every intelligent dentist in the country.

The work is handsomely printed and illustrated by the Publishers.

THE MEDICAL EXAMINER.

PHILADELPHIA, FEBRUARY, 1854.

MEDICAL NEWS.

From a most interesting discourse on the life and works of the late Robert James Graves, M. D. F. R. S., by Wm. Stokes, M. D., published in the London Medical Times and Gazette, we extract the following: "He was, with me, going round the Hospital, when we entered the convalescent ward. He began to expatiate on the healthy appearance of some who had recovered from severe typhus. "This is all the effect of our good feeding," he exclaimed; and lest, when I am gone, you may be at a loss for an epitaph for me, let me give you one, in three words :—

"*He fed Fevers.*"

"I have given you an epitaph dictated by him in a sportive mood. I will now give you another, which he wrote himself in the earlier part of his last illness, and which he repeated before his death, with directions that it should be engraved upon his tomb :—

ROBERT JAMES GRAVES,
Son of Richard Graves, Professor of Divinity,
Who, after a protracted and painful disease, died in the love of God,
and in the faith of Jesus Christ."

In the same Journal, January 7th, we have an account of another death from chloroform, communicated by Dr. Wustefeldt, of Neustedt. But one drachm was administered, when insensibility took place. The surgeon had scarcely commenced dividing the skin over the tumor (lipoma) when the girl suddenly fell forwards. All efforts to restore her were found unavailing.

We have received a new Journal, published in New York, entitled the American Medical Monthly. It is edited by E. H. Parker, M. D., and conducted by the professors of the New York Medical College. With such a corps of assistants, it cannot fail in being a good Journal. We wish it a long life and prosperity.

Dr. J. B. McCaw has become associated with Dr. Otis, as editor of the Virginia Medical and Surgical Journal.

Officers of the Philadelphia County Medical Society for 1854.—At a meeting of the Philadelphia County Medical Society, held January 18th, 1854, the following Officers were elected for the present year:

President.—Dr. Thomas Forrest Betton.

Vice Presidents.—Dr. George W. Norris, Dr. Thomas H. Yardley.

Recording Secretary.—Dr. D. Francis Condie.

Assistant Secretary.—Dr. Robert P. Thomas.

Corresponding Secretary.—Dr. Henry S. Patterson.

Treasurer.—Dr. William Byrd Page.

Censors.—Dr. Lewis Rodman, Dr. Nathan L. Hatfield, Dr. E. F. Leake, Dr. William H. Klapp, Dr. William Mayburry.

Published by order,

Robert P. Thomas.

Philadelphia, 1854. Assistant Secretary.

Obituary.—On the 4th of January, Dr. Samuel McClellan, aged 54 years. Dr. McClellan was formerly Professor of Obstetrics in the Jefferson College, and lectured afterward on the same branch in the Pennsylvania College. He was in the enjoyment of an extensive practice, previous to his sickness. He died, much regretted by his numerous friends, both public and professional.

John Esten Cooke, on the 20th of October, in the 70th year of his age.

Dr. Cooke succeeded Dr. Drake in the Chair of the Theory and Practice in Transylvania University, and was subsequently connected with the Medical Institute of Louisville. He was a voluminous writer. Beside his treatise on Pathology and Therapeutics, he wrote for the American Medical Recorder, the Transylvania Journal of Medicine, and occasionally on theological subjects.

Drs. Drake and Cooke were fellow students in Philadelphia in 1805.

In Laurens County, Georgia, where he was a successful practitioner, Dr. A. A. Gittenau, after completing the 35th year of his age. He was a native of Ireland, educated a gentleman and a scholar. He emigrated to this country in 1846, and died of consumption on the 6th of December, 1853.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—The annual meeting of the Society, for 1854, will be held in the Borough of *Pottsville*, Schuylkill Co., commencing on *Wednesday, May* 31, at 11 o'clock, A. M. Secretaries of County Societies are requested to send certified copies of the credentials of their delegates, to either of the undersigned, before that date.

HENRY S. PATTERSON, M. D.
No 92 Arch Street, Philadelphia.
ISAAC R. WALKER, M. D.
Spread Eagle P. O., Chester Co.

RECORD OF MEDICAL SCIENCE.

On some of the principal effects resulting from the Detachment of Fibrinous Deposits from the Interior of the Heart, and their mixture with the circulating blood. By WM. SENHOUSE KIRKES, M. D., Licentiate of the Royal College of Physicians, &c. Communicated by George Burrows, M. D., F. R. S., Physician to St. Bartholomew's Hospital.

That the fibrinous principle of the blood may, under certain circumstances, separate from the circulating fluid during life, and be deposited within the vascular system, especially on the valves of the heart, is a fact so clearly established and so generally admitted, that I need only, at the outset of the communication I have the honor to present to this Society, allude to it as a settled truth, and refer, for the proofs, to the various general works on diseases of the heart and blood-vessels, and to such special essays on the subject as those of Dr. Burrows* and Dr. Hughes.† From these sources may also be gathered nearly all that is yet known respecting the various conditions under which the deposition of fibrine takes place, and the several forms which the deposits assume. Into these general details I do not purpose entering, my object being simply to consider the effects which the deposits may produce on the system at large. It may, however, be premised that the forms of fibrinous concretions, to which my observations chiefly apply, are, first, the masses usually described as Lænnec's globular excrescences; and, secondly, the granular or warty growths adhering to the valves and presenting innumerable varieties from mere granules to large irregular fungous or cauliflower excrescences projecting into the cavities of the heart.

Avoiding all discussion concerning these latter growths, I proceed at once to state that in whatever way they may originate, they are, when once formed, full of peril, and often remain so even long after the circumstances which gave rise to them have passed by. If of large size and only loosely adherent, as they often are, one or more masses of even

*Med. Gaz. vol. xvi. 1834–5. †Guy's Hosp. Reports, vol. iv. 1839.

considerable magnitude may, at any time, be detached from the valves and conveyed with the circulating blood until arrested within some arterial canal which may be completely plugged up by it, and thus the supply of blood to an important part be suddenly cut off, and serious, even fatal results ensue. Or, the deposits on the valves may be detached in smaller masses, and pass on into arteries of much less size, or even into the capillaries, where, being arrested, they may cause congestion, followed by stagnation and coagulation of the blood, with all the subsequent changes which blood coagulated within the living body is liable to undergo. In this way are probably induced many singular morbid appearances often observed in internal organs, and rarely well accounted for. Again, the masses of fibrine may soften, break up, and discharge the finely granular material resulting from their disintegration ; and this, mingling and circulating with the blood, may give rise to various disturbances indicative of a contaminated state of this fluid, producing symptoms very similar to those observed in phlebitis, typhus, and other analogous blood-diseases. In one or more of these several ways, and probably in others not yet clearly recognised, fibrinous material detached from the valves, or any other part of the interior of the heart, may be the cause of serious secondary mischief in the body.

It appears unnecessary to insist here on the possibility of any of the various forms of fibrinous deposit found within the heart being detached either spontaneously or by the mere force with which the current of blood passes over the surfaces on which they are placed. For it is well known that after death a very gentle force, sometimes even the slightest touch, will loosen and dislodge both small granular particles and masses of considerable size from the valves and inner surface of the heart. Not unfrequently, indeed, lumps of old laminated fibrine of even considerable magnitude are found loose in the cavities of the heart, having probably dropped off before death ; and sometimes a mass of this kind may be found some distance along the aorta or pulmonary artery.

It is clear, then, that such fibrinous deposits may admit of being very readily detached, and it must be equally clear that once floating freely in the blood they are exposed to the almost certain consequence of being transmitted with this fluid, and stopped at the first vessel too narrow to allow of their transit.

The parts of the vascular system within which these transmitted masses of fibrine may be found, will, of course depend, in great measure, upon whether they proceeded from the right or left side of the heart. Thus if they have been detached from either the aortic or mitral valves, they will pass into the blood propelled by the left ventricle into the aorta and its subdivisions, and may be arrested in any of the systemic arteries or their ramifications in the various organs, especially those which, like the brain, spleen, and kidneys, receive large supplies of blood directly from the left side of the heart.

If, on the other hand, the fibrinous masses are derived from the pulmonary or tricuspid valves, the pulmonary artery and its subdivisions within the lungs will necessarily become the primary, if not the exclusive seat of their subsequent deposition. A division of the subject

being thus naturally formed, I propose to embody the remarks I am about to submit to the Society under two principal heads, considering—

1st. The remote effects resulting from the separation of fibrinous or analogous deposits from the valves or interior of the left side of the heart; and

2d. The corresponding effects produced by the detachment of like deposits from the valves or interior of the right side of the heart.

PART I.—*On the effects which may result from the separation of fibrinous deposits from the valves or interior of the left side of the heart, and their circulation with the systemic blood.*

In endeavoring to elucidate this part of the subject, I beg to draw attention, in the first place, to instances in which it seems probable that masses of considerable magnitude have been detached from the left side of the heart, and subsequently arrested in an arterial channel of notable size; secondly, to some of the effects which seem to ensue when smaller arterial vessels or capillaries are similarly blocked up; and, thirdly, to circumstances which make it probable that, not unfrequently, the introduction of particles of fibrine into the circulating blood gives rise to constitutional symptoms indicative of a poisoned state of this fluid.

1. The first three cases which I shall offer, are, in many respects, identical; for in each death seemed to ensue from softening of the brain, consequent on obliteration of one of the main cerebral arteries by a mass of fibrinous material, apparently derived directly from warty growths on the left valves of the heart.

Case I.—Margaret Shaw, æt 34, a pale, weakly-looking woman; admitted into St. Bartholomew's Hospital, under Dr. Roupell, about the middle of July, 1850, on account of pains in her lower limbs, and general debility. A loud systolic murmur was heard all over the cardiac region. No material change ensued in her condition until August 7th, when, while sitting up in bed eating her dinner, she suddenly fell back as if fainting, vomited a little, and when attended to was found speechless, though not unconscious, and partially hemiplegic on the left side. The hemiplegia increased, involving the left side of the face as well as the limbs, and gradually became complete in regard to motion, while sensation seemed to remain unimpaired. She continued speechless and hemiplegic, but without loss of consciousness, for five days, when she quietly died.

On examining the body, six hours after death, the skull and dura mater were found natural; but the small vessels of the pia mater were much congested, the congestion amounting, in some places, almost to ecchymoses. The right corpus striatum was softened to an extreme degree, being reduced to a complete pulp of a dirty greyish-white tint, and without any remains of its characteristic striated structure. The corresponding optic thalamus was healthy; but a condition of pale softening, similar to that affecting the corpus striatum, existed also to a considerable extent in the posterior lobe of the right cerebral hemisphere. The rest of the cerebral substance of this hemisphere was softer than natural, and appeared to contain less blood than ordinary. All other parts of

the brain were healthy. The right middle cerebral artery just at its commencement was plugged up by a small nodule of firm, whitish, fibrinous-looking substance, which, although not adherent to the walls of the vessel, must have rendered its canal almost, if not quite, impervious. With the exception of a speck or two of yellow deposit in their coats, the rest of the vessels at the base of the brain were healthy and filled with dark blood.

The heart was enlarged; on its exterior were several broad white patches of old false membrane. The right cavities and left auricle contained recent separated coagula; the fibrine firm and whitish. The right valves were healthy; so also were the aortic, with the exception of slight increase of thickness. The mitral valve was much diseased, the auricular surface of its large cusp being beset with large warty excrescences of adherent blood-stained fibrine. There were a few scattered deposits in the coats of the aorta. The right common iliac artery, about an inch above the origin of its internal branch, was blocked up by a firm, pale, laminated coagulum, which extended into the internal iliac, and for about a quarter of an inch down the external iliac, where it terminated rather abruptly. The lower portion of the coagulum was colorless, and softer and more crumbling than the upper, which was also more blood-stained and laminated. There was no adhesion of the coagulum to the walls of the vessels. No similar clot existed in the iliac vessels on the opposite side. The pleuræ were adherent in places; the lungs œdematous, and in places solidified by compact greyish-white masses, such as might result from uncured pneumonia. The pulmonary vessels were free from old coagula.

The liver and intestinal canal were healthy. The spleen was large, pale, and soft. One large portion, about a fourth of the organ, was converted into a mass of firm, yellowish-white, cheesy substance. The kidneys were pale, rough, and granular. Within the cortex of the right were several large masses of yellow deposit, surrounded by patches of redness. The portions of medullary structure passing to these deposits were compact, dryish, and yellow.

In the case just narrated death evidently resulted from softening of a large portion of the right side of the brain; and the cause of this softening appeared to be an imperfect supply of blood, consequent on the middle cerebral artery of the same side being obstructed by a plug of fibrine within its canal. I am not aware that there has yet been recorded a case in which fatal softening of the brain resulted from a cause like this; therefore, in itself, this case is one of value. That the existence of the fibrinous coagulum within the cerebral artery was the real cause of the changes in the brain, can, I think, scarcely admit of question. The sufficiency of such an obstruction to produce the effects ascribed to it is fully established by the many instances in which disturbance, or complete arrest of function in a part, with subsequent atrophy or disorganisation of its tissue, results from any circumstance which materially impedes or entirely cuts off its supply of blood. Examples of this kind at once suggest themselves;—such as the weakened and subsequently degenerated heart, when the coronary vessels are diseased by deposits in

their coats; the feebleness, atropy, or even gangrene, ensuing in the whole or part of a limb whose arteries are similarly diseased or obstructed from any other cause; also the impairment of cerebral function and subsequent softening of the tissue of the brain when the cerebral vessels are much diseased. But perhaps the best illustration bearing on the case in question is afforded by the results sometimes observed after ligature of one of the common carotid arteries. Such an operation is not unfrequently followed, almost immediately, by giddiness, loss of speech, and unconsciousness, which may pass on even to fatal coma. When not thus speedily fatal, hemiplegia of the side opposite to that of the ligatured artery may ensue, and death may occur from that cause at a more remote period, while examination after death discloses a greater or less amount of disorganisation, amounting sometimes to gangrene, in the cerebral substance, especially on that side on which the operation was performed.*

"Admitting this explanation of the mischief which ensued in the brain, one is naturally led to enquire into the source of the fibrinous plug found in the middle cerebral artery. The suddenness with which the cerebral symptoms came on made it probable that the blocking up of the vessel was equally sudden, and not the result of a gradual coagulation of blood in this situation. The absence, too, of all appearance of local mischief in the coats of the vessels at the obstructed part, and of general disease of the arterial coats elsewhere, also pointed to some other than a local origin for the clot; and I formed the opinion at the time of the examination, that a portion of the fibrinous growths found on the mitral valve had become detached, and then carried with the stream of blood up the carotid artery, until arrested at the angle whence the middle cerebral artery proceeds. This explanation, which fits equally well for the origin of the plug impacted in the common iliac artery, appears so reasonable, that it is difficult to doubt its correctness; for, as already remarked, it is quite conceivable that portions of the loosely adhering masses of fibrine might be readily washed off by the stream of blood continually passing over the valve; and that when once admitted into the circulating current, such portions would necessarily be arrested the moment they arrived at a vessel too small to allow of their transit along its canal."

The particulars of two other cases very similar to the above are then given. At the conclusion of the narrative of the 3d case, Dr. Kirkes remarks, "In all essential respects this case closely resembles the two previously narrated. In each there was pale softening of the brain; a plug of fibrine obliterating the canal of one of the main cerebral arteries; masses of fibrinous deposit in the kidneys and spleen; and, which seemed to be the source of the mischief elsewhere, large, warty, fibrinous excrescences on the left valves of the heart.

* The whole subject of the effects produced on the cerebral circulation by ligature of the carotid artery has been so thoroughly discussed by Dr. Burrows, in his work on "Disorders of the Cerebral Circulation," (pp. 72—9,) that it seems quite unnecessary to add more to the remarks made on this subject in the text.

"So many, and yet such rare features of resemblance, cannot fail in demonstrating a very close connection between the several morbid appearances so exactly reproduced in each case."

At first it appears singular that in each of these cases, as also in others I have had the opportunity of seeing, the clot should be found as nearly as possible in the same situation. But a glance at the arrangement of the arteries at the base of the brain, especially in an injected specimen, will make it clear that this point is, of all others, the one perhaps most likely to arrest a solid mass floating in the blood, transmitted to the brain by the internal carotid artery; for almost directly after its entrance into the skull, the carotid divides into its two main branches, the middle and anterior cerebral, which immediately diverge in almost opposite directions. The sudden diminution in size, resulting from the division, and the different directions at once taken by the two branches, will together tend to make the angle whence the branches diverge well calculated to arrest any solid body transmitted along the carotid; while, since of the two branches, the middle cerebral is the largest, and also maintains more nearly than the anterior the original direction of the trunk from which they both sprang, a solid body seems more likely to pass into it than into the anterior division. And such is found to be the case; for if the plug is not found sticking directly at the angle, it is found a short distance up the canal of the middle cerebral.

"It has long been admitted that any disease of the cerebral arteries sufficient to impede the transit of a due quantity of blood may induce softening of the brain, from imperfect nutrition. But the diseased state of the vessels to which nearly all observations on the subject apply, have reference only to the peculiar fatty or atheromatous condition so frequently presented by the coats of the cerebral arteries, especially in persons of advanced life. And I have been able to meet with very few recorded instances in which distinct fibrinous clots have been noticed blocking up the canal of any of the arteries of the brain; and even when their existence has been noted, the conditions leading to their formation, and the relation which they bear to the attendant cerebral softening, have, so far as I know, never received an explanation similar to that which I now beg to offer."

2d. Dr. Kirkes then proceeds to consider some of the effects which smaller portions, similarly detached and arrested in minute arterial branches or in capillaries, appear capable of producing. One of these effects seems to be displayed by the singular masses of yellow fibrinous-looking substance not uncommonly found in the spleen, kidneys, and other organs, and hitherto described under such names as "capillary phlebitis," "metastases," or "fibrinous deposits."

In 19 cases, in which he has observed these deposits, not only were the heart or the valves diseased in each of them, but in 14 of them there were fibrinous growths on the surface of the left valves or interior of the left cavities, while in the remaining 5 there is simple mention of valvular disease, without any statement as to whether fibrinous deposits existed or not. Especial attention is directed to the fact of the co-exis-

tence of these minute spots with the large and clearly-discernible masses, for since it seems to prove the identity of the two forms of disease, it likewise makes it probable that the small red spots with their yellowish centres, even when found uncombined with the larger masses, have originated in the same cause which led to their formation in other cases.

3d. In regard to the introduction of particles of fibrine into the circulating blood giving rise to phenomena, indicative of a poisoned state of that fluid, he narrates a case, selected from several similar to it, in which the symptoms were very obscure from the beginning, and the obscurity increased as the symptoms of cerebral oppression came on, and proved rapidly fatal. The lad's depressed, languid aspect, with an abundant petechial eruption, seemed to indicate, in the absence of a clear history, the existence of low fever, and the restless, delirious manner in which he passed his first night in the Hospital, favored the view and justified the employment of wine and simple salines; yet the fatal coma which rapidly supervened two days after admission, was quite unintelligible on this supposition, and could only be understood by an examination after death. The autopsy revealed the existence of friable, loose, fibrinous vegetations on both the mitral and aortic valves. From these, he thinks, portions had probably separated during life, and transmitted by the blood, had been arrested in the capillary net-works and smaller arteries, thus producing the various petechial-looking spots in the skin, and most of the serous and mucous surfaces of the body, the buff colored blotches and streaks, and the solid fibrinous masses in the kidneys and spleen, while they probably caused the fatal issue of the case by the pressure resulting from the extreme engorgement of the minute vessels of the pia mater and the substance of the brain.

PART II.—*On the effects which may result from the detachment of fibrinous deposits from the right valves of the heart.*

Dr. Kirkes infers also that these deposits may induce corresponding secondary affections of the lungs. It may be clearly shown, he thinks, that most of the fibrinous or other secondary deposits there, also many of the old coagula found in the pulmonary artery or its branches, and possibly some forms of pulmonary apoplexy, are closely connected with, if not actually dependent upon, fibrinous deposits on the valves, or interior of the right side of the heart, or materials transmitted through the heart by venous blood. Cases substantiative of his views are related.

In conclusion, he recapitulates the principal points he has endeavored to establish, which are, 1st. The general fact that fibrinous concretions on the valves or the interior of the heart admit of being readily detached during life, and mingled with the circulating blood: 2dly, that if detached and transmitted in large masses, they may suddenly block up a large artery, and so cut off the supply of blood to an important part; if in smaller masses, they may be arrested in vessels of much less size and give rise to various morbid appearances in internal organs; while, under other circumstances, the particles mingled with the blood may be extremely minute, possibly the debris of softened fibrine, yet in sufficient quantity and with sufficient power to produce a poisoned state of the

circulating fluid, as manifested in the production of typhoid symptoms: 3dly, that the effects produced and the organs affected, will be in great measure determined by the side of the heart from which the fibrinous masses have been detached; for, if the right valves have furnished the source of the fibrine, the lungs will bear the brunt of the secondary mischief, displaying it in coagula in the pulmonary arteries, and various forms of deposit in the pulmonary tissue; but if, as is far more commonly the case, the left valves are affected, the mischief is more widely spread, and may fall on any systemic part, but especially on those organs which, such as the brain, spleen, and kidneys, are largely and directly supplied with blood from the left side of the heart.—*Abstract of article iu Medico-Chirurgical Transactions.*

On Peritonitis, simulating perforation of the intestines.

By Dr. Thirial.

(Translated for the Examiner.)

The opinion inculcated by Louis, that perforation of the intestine has taken place whenever, in an acute disease, a violent local pain in the abdomen suddenly takes place, which soon spreads, is increased by pressure, and is accompanied by anxious and distressed expression of the features, and straining and vomiting, is liable, according to the author, to many exceptions, of which the following are instances.

In October, 1835, a girl, aged 21 years, was admitted into La Charité, with symptoms of mild typhoid fever. After about 20 days of illness, she became convalescent and commenced taking a little food, when suddenly, in consequence of great mental agitation, she was seized with the most violent pain in the abdomen, accompanied with bilious vomiting. Her features expressed great anxiety and her pulse sank. Rayer diagnosticated peritonitis, dependent upon perforation of the bowel, and applied on the following day 20 leeches. Large doses of opium, (25 ctgrmm. Extr. thebaic p. die), rest and prohibition of drink were also ordered. Notwithstanding these, the vomiting and the other symptoms continued; the tongue became dry; the abdominal pain having disappeared, excepting under strong pressure. In the evening, 72 hours after the onset of the attack, the patient died.

Autopsy. The peritoneum to some degree, was moderately injected, and upon its visceral surfaces, plastic exudations were presented in many places. In the upper pelvis, 4 or 5 oz. of a milky, albuminous fluid were found; the mesentery was covered throughout with a more or less thick pseudo-membrane of thin consistence. Water was poured through the whole intestinal canal without showing the smallest perforation. The whole length afterwards opened, exhibited the bowel perfectly sound, except that at the end of the ileum, and more particularly near the ileo-cœcal valve, 4 or 5 of Peyer's glands were found, which were of a blackish color, but showed no ulceration. The other organs of the abdomen were sound. Spleen small and firm. In the posterior part of the lung there was slight congestion.

2d. A laborer, 18 years old, tall and slender, entered the hospital on the 10th of February, 1846, with symptoms of severe typhoid fever;

headache, diarrhœa, debility, &c., &c. Costiveness, swelling of the abdomen, nightly delirium, dull expression of countenance, scattered spots upon the face and abdomen, soon ensued and once a moderate epistaxis. From the 15th to the 20th of February all the symptoms increased, especially the delirium, which became violent; the tongue and teeth became black and coated with sordes; speech difficult; pains in the back, belly, and lower extremities; involuntary movement of the lips; subsultus tendinum, &c., &c. This state continued until the 25th, when a slight improvement took place: but at the same time deafness commenced in the right ear. The previous treatment consisted in bleeding, warm applications, clysters, cooling drinks, &c., &c. From this time tonics were given and two blisters were applied to the inner surface of the thighs. By the end of February the patient had recovered his appetite and was considered convalescent. About the 5th of March, quite a large discharge of healthy pus took place from his right ear, in consequence of an abscess there of the size of a nut. Two days afterwards another abscess on the right side of the abdomen, and soon afterwards several more on the back of the neck, thigh, &c. appeared; some of which broke and others were opened. During the night of the 30th of March, after an attack of diarrhœa, that had lasted several days, the patient was seized with a violent pain in the stomach, and vomiting of green matter. On the 31st his countenance was pale, features expressing pain and anguish; he rested upon his back, with his legs drawn up to his belly; the latter very painful under pressure. It appeared that during the preceding day, he had suffered from indigestion. He was ordered depletory and narcotic applications externally, and opiates by the mouth. On the 1st of April his thirst became insatiable; pain in the abdomen more violent; pulse frequent and small; respiration short and gasping. The pain increased more and more, and on the following day at noon he died.

Autopsy. Neither by the above mentioned experiment of filling the intestine with water, nor by the closest investigation of the opened intestine, could any perforation be discovered. At the end of the ileum, some of Peyer's glands slightly projected above the surface, but were otherwise normal. Others in the neighborhood of the valve projected more distinctly and were black in color. Two or three of them showed spots slightly ulcerated and cicatrised. The mucous membrane of the valve was colored slate-grey, and about one foot from the valve the mucous membrane of the small intestine was injected. Its walls were decidedly thinned. The large intestine showed nothing abnormal. The mesenteric glands were somewhat swollen. The coating of the peritoneum of the whole intestinal canal was reddened. The subserous vessels were injected. In the individual sulci of the convolutions was found a sero-purulent liquid. In the cavity of the lesser pelvis, a considerable deposit of yellow, thick, creamy pus, and in various parts of the peritoneum large amounts of adherent pseudo-membrane appeared. All the other organs were normal.

These cases, besides the interest which attaches to them as respects their diagnosis, are important as regards the question of the cure of peritonitis, dependent on perforation of the bowel. Stokes, Graves, and

others report many instances of cures in these cases, which they attribute to large doses of opium. The author ventures to suggest from his observations, that most of these cases where there could be no post-mortem as the last and strongest proof, should be attributed, not to a perforation, but to a more or less circumscribed peritonitis. He allows, however, that the differential diagnosis of these affections is still imperfect.—(*Wagner,*) *Schmidt's Jahrbuch, from L' Union,* 83—85, 1853.

On the Expansion of the surface of the brain and its connexion with the development of mind. By BAILLARGER, Ann. Méd. Psych.

(Translated for the Examiner.)

The author, in the 1st part of his Essay, treats of the measurements of the expansion of the cerebral convolutions. In the 2d, considers the question, whether there exists any relation between this expansion and the development of mental power.

It had been previously attempted to determine the cerebral surface by measuring the pia mater when spread out, but it has been found impossible to do this completely. Gall attempted to measure the surface by unfolding the brain, but its yielding nature and its destruction by the finger cause numerous errors. The author endeavors to avoid these by gradually and thoroughly removing the white substance, so that the hemisphere becomes reduced to a thin layer, which can be easily unfolded and moulded in gypsum. This mould can then be gradually filled with clay, whilst between the two is inserted a thin fabric, the surface of which will admit of an accurate admeasurement. By such means, he obtained the following results. The mean of the surface-expansion of five brains amounted to 1.700 cubic ctmtr. In two instances where both hemispheres were separately measured, the surface of the right, in the first, measured 764 cubic ctmtr., and that of the left 789 cubic ctmtr.; in the second, the right measured 853 cubic ctmtr., and the left 837 cubic ctmtr.

The cerebral surface of rabbits measured = 24, of cats = 52, of dogs = 104, of sheep = 160; and of swine = 220 cubic ctmtr.

As regards the relation of the surface expansion of the brain to the development of intelligence, the author observes, that both the expansion of the surface and the relative volume of the brain should be taken into consideration. For instance, the brain of the dog has less surface than that of the ox, though the dog has more intellignce.

When the compactness of the various brains is about the same, its volume is in proportion to its weight: which can be therefore, substituted for the volume. In comparing the brain of a man with that of a rabbit, it was found that the hemispheres of the former weighed, after removing the membranes, the corpora striata, the thalami optici and the corpus callosum, in all 900 grammes. Its expansion was = 1.700 cubicc tmtr. The hemispheres of the rabbit weighed 5 grammes. Its surface measured 24 ctmr. The man's brain weighed therefore, 180 times more than the rabbit: whilst its surface was only 70 times greater;

therefore the hemispheres of the rabbit posseses in proportion to its weight, a surface 2½ times greater than that of man.

The author has in this manner compared the brain of man with those of rabbits, dogs, sheep and swine; and the surface of these, in connection with their weight, has always proved to be about ¼, ⅓ or ½ more than in man. The smallest brains have always the largest surface and the expansion of the hemispheres seem to bear inverse proportion to their weight. He comes therefore to the conclusion, that the development of intelligence is not in a direct but apparently in an inverse ratio to the extent of cerebral surface.—(*Schmidt's Jahrbuch.*)

Remarkable case of Foreign Bodies in the Stomach and Duodenum, Complete Obstruction of the Bowel and Mechanical Displacement of Organs. By JOHN MARSHALL, Esq.

Mrs. B., æt. 41, the wife of a corn dealer, residing at B——, in Oxfordshire, was a rather tall well-formed woman of fair complexion, good intelligence and habitually benevolent to the poor.

In the year 1844 I first attended her in childbirth. The labor was natural, and she soon recovered. My father had previously been her medical friend, and was with her at the birth of five children; a fortnight after the birth of the fifth child, in December, 1842, she was affected with hæmatemesis, vomiting a wash-hand basin full of blood. During the succeeding forty-eight hours she lay in a state of total unconsciousness, pupils greatly dilated, and the pulse scarcely perceptible. The vomiting did not return, and she slowly recovered, but her countenance ever after was sallow.

In the autumn of 1845 I found her complaining of frequent sickness, with pain at the epigastrium, and in the left groin. On examining the abdomen, I discovered a hard tumour in the left iliac fossa, which moved freely across the abdomen, as she turned from side to side. The size and shape of this tumor were very like an ordinary placenta, one edge thicker than the other; the thickest edge much harder, and imparting to the fingers the feeling of its being very heavy. She stated that she had felt this substance for some months, and whenever she turned in bed it always moved, and caused nausea, but gave her no pain when she was quiet, nor was it tender to the touch. She suffered much from flatulence, and pain between the shoulders shooting through to the left breast. The catamenia had not appeared for three months, and she believed she was pregnant. The bowels were torpid, and she was obliged frequently to take her usual aperient of blue pill and colocynth. The nausea increased, and the stomach rejected everything; large quantities of green ropy mucus, occasionally with blood, were thrown up, all of which was carefully examined, without detecting anything which would throw light on the case. Numerous remedies were employed to allay her distressing sickness, but were equally unavailing, and the emaciation and exhaustion became so great, that her death was daily expected. One teaspoonful of pale brandy was now given every hour, and not an

atom or drop of anything beside. From this time the vomiting ceased. After continuing this for two days a little food was allowed, and she gradually gained strength and flesh, and in four months was able to walk two miles, and looked almost as well as usual.

During this illness, Dr. Cowan, of Reading, visited my patient; he was greatly interested in her case, and expressed himself to be as much puzzled as I was respecting the nature of the tumor, which he compared to a cannon ball rolling across the abdomen.

Nearly five years elapsed before any serious symptom returned. The pain between the shoulders was often complained of, and there was occasional sickness. Much difficulty was experienced in keeping the bowels in order; the secretions were generally healthy in color, and formed. Occasionally the face and limbs became œdematous, but an aperient pill, with a little gin in gruel taken at bedtime, would always remove these symptoms in two or three days. The catamenia never returned after the illness of 1845.

On the 8th of October, 1850, I again saw her in consultation with Mr. Corsillis, of B——. From him I learned that she had been ill three weeks, and all her old symptoms had returned. Incessant vomiting with pain between the shoulders, had reduced her to a state of great weakness and emaciation. A few hours after my visit, severe spasmodic pain came on in the bowels, and quickly terminated her sufferings.

Post-Mortem.—Eighteen hours after death, with the assistance of Mr. Corsillis, I examined the body. The thoracic viscera were healthy and free from adhesions. On opening the abdomen the stomach was found drawn down to the pubis, and in its form resembled a champaign bottle. The pyloric end lay beneath the arch of the pubis and the duodenum under a portion of the sigmoid flexure of the colon, from which it was traced to the pancreas, which was drawn down considerably out of its normal position. The liver was large and paler than natural. The gall-bladder distended with bile. The spleen and pancreas were healthy, but small. The kidneys rather hypertrophied. The bladder small. The uterus and ovaria healthy. The intestines were of very small calibre. The cœcum and colon resembled the small intestines, the bands and sacciolated appearance being scarcely discernible. The jejunum and ileum contained a little ropy mucus, and there was some fœcal matter in the rectum. No ulceration was apparent throughout the whole length of the intestinal canal, nor was there found the slightest peritoneal attachment or appearance of inflammation within the cavity of the abdomen.

Having tied the œsophageal end of the stomach and the duodenum, I removed these organs. The stomach contained about a pint of semi-fluid matter, and felt very like the crop of a fowl; the duodenum resembled a large sausage stuffed with lead. On cutting into the stomach I found it partially filled with some gruel-like fluid, and in the lower half—which evidently constituted the tumor during life—an immense number of pins, of a purple black color, not corroded, varied in size, all bent or broken, many very pointed. The pyloric half of the stomach

presented a remarkably thickened condition of the villous coat, being highly vascular, and raised in rugous elevations like the stomach of an ox. The muscular coat also was greatly hypertrophied. The weight of the pins contained in the stomach was *nine ounces.* An incision made into the duodenum *displayed a mass of pins very tightly packed, of various shapes, similar to those found in the stomach, and wholly obstructing the tube.* These weighed a *pound,* as nearly as I could ascertain without removing them.

Her husband could scarcely believe the truth of what he saw, when we showed him the contents of the stomach, for he affirmed that he had never seen his wife put pins into her mouth. A son, 17 years of age, said that he had often observed his mother biting pins, and believed that she swallowed them. She took them out of her thimble with her tongue, having previously bent the head and point together. When his mother corrected him for any bad habit, he would say—why do you eat pins? This reply always silenced her. He stated that the servants when shaking the carpets, frequently remarked on the number of bent pins they found.

Mrs. B—— had a keen appetite, and would always partake of any food she fancied, however improper or indigestible. I have known her to eat cold boiled pork when unable to raise herself in bed, having four days previously vomited a large quantity of blood. Of her early history I can learn but little. A sister informs me that when a child she was fond of eating starch and slate pencil—and she remembers her biting pins. When seventeen years of age she vomited blood, and remained for some years an invalid, until sent for change of air to Bath.—*Medico-Chirurgical Transactions.*

Practical Remarks upon some Important Medicinal Agents not in General Use. By F. E. Wilkinson, M. D.

Strychnia.—Dr. Marshall Hall, in some recent papers published in *The Lancet,* speaks very highly of the beneficial effects of minute doses of strychnia, dissolved in acetic acid. I have for some years been in the habit of prescribing small doses of strychnia, and can corroborate Dr. Hall's valuable testimony in every particular; therefore any remarks of mine, upon its effects in epileptic cases, would be unnecessary.

My method has been to dissolve two grains of strychnia in one ounce of phosphoric acid of the London Pharmacopœia—a very speedy and certain solvent, and also possessing, doubtless, the additional excellent property of assisting the good effect of the strychnia upon the brain and nervous system. Of this solution, in cases of prolonged dyspepsia, in neuralgia, indeed in many states of the nervous system requiring tone, it has been usual with me to administer, after the state of the secretions have been attended to, a dose, consisting of five minims of the above solution, three or four times daily, either alone or combined with some other appropriate remedy, according to the nature and complication of the case. This medicine has also a remarkable effect in ague. During a four years' residence at Cambridge, I had opportunities of seeing the

treatment of a vast number of cases of intermittent fever, but in no one instance, as far as my memory serves me, was recovery nearly so rapid as I have seen it after the administration of this powerful remedy.

I subjoin a few cases, illustrating these remarks, whilst I know many friends who could readily corroborate these facts from cases occurring in their practices.

Neuralgia.—July 11, 1851.—Mrs. P——, married, aged thirty-two, pale and emaciated. She has been for some years the subject of neuralgia, which attacks her whenever she takes cold, and occasionally quite incapacitates her from attending to the duties of her family. She is now suffering acutely from pain and the loss of rest. The bowels being confined, the following was ordered:—Calomel three grains; conserve of roses, sufficient quantity to make into a pill. Liquor of strychnia, (two grains to an ounce,) twenty minims; sulphate of magnesia, one ounce; spearmint water, six ounces. To take one-fourth three times a day.

12th.—The pain seems relieved this afternoon, but the patient is still suffering from loss of rest. To take belladonna, a quarter of a grain; extract of hyoscyamus, four grains; mix, and make into a pill.

13th.—Slept well; feels better. The medicine has acted too freely upon the bowels.

14th.—Is quite free from pain, but still a numbness exists in the old place; continue the mixture.

15th.—The pain has entirely left; feels more cheerful, and free from pain than she has done for many months; appetite improving.

From this time the patient continued free from pain, and gradually recovered a great amount of health and strength under the continued use of the above medicine, combined latterly with some tincture of iron.

Case 2.—1851,—C. P——. In this case the disease had been existing more or less constantly, the pain scarcely leaving her entirely for some months. Is now suffering from bilious diarrhœa. After prescribing a dose of calomel and opium, followed by a rhubarb purge, to cleanse away irritating matter, I prescribed iodide of potassium, two grains; liquor of strychnia, five minims; water one ounce, three times a day. After taking the medicine for some days the pain entirely ceased. The treatment was continued for six weeks, and she has had no return of the symptoms for now nearly three months.

In Ague Cases.—Jan. 5th, 1852.—J. W.——was taken ill yesterday, just before leaving work, with violent pain in the left side, and with uncontrollable shivering, followed by fever, with some amount of delirium, and then by profuse perspiration. Has not felt quite well for some time. Is suffering from the cold stage of intermittent at the present time; looks blue and pinched. Ordered, calomel, three grains; Dover's powder ten grains; to be made into a powder and to be taken immediately. A compound jalap powder in the morning. Slept pretty well: medicine acted freely. Shivering returned in the morning. Altogether the patient does not think himself improved. Liquor of strychnia, forty minims; water, six ounces; to be made into a mixture; one-forth to be taken every four hours.

7th.—The time of accession of the paroxysm was later and the attack less violent.

8th.—Continues improving.

From this time the patient gradually improved, the dose of strychnia being gradually diminished, and on calling to see him on the 14th, he had returned to work, feeling himself quite well.—*Lancet.*

Abstract of Meteorological Observations for December, 1853, made at Philadelphia, Pa. By PROF. JAMES A. KIRKPATRICK.

1853. Dec.	BAROMETER. Corrected for Temperature. Mean.	Range.	THERMOMETER. Mean.	Range	Dew point. 2 P. M.	Prevailing Winds.	General Remarks.
	Inches.	Inch.	deg.	deg.	deg.		
1	29.969	.045	40.00	6	29.0	N.N.W.	Morn. clear, aft. and ev. cloudy.
2	29.957	.052	40.25	2	33.0	N.E.	Cloudy. *Rain* 5½ to 9 P.M.
3	29.996	.020	39.00	6	36.	W.N.W.	Cloudy.
4	30.186	.075	32.50	7	24.3	N.W.	Clear.
5	30.216	.047	34.00	10	29.7	N.E.	M. & af. cloudy, ev. clear; *Snow* 9
6	29.916	.262	42.50	27	46.7	S.W.	do. do. ev. do. [to 10 A.M
7	30.043	.174	38.50	13	31.	N.W.	do. do. ev. do.
8	30.112	.045	29.50	7	26.	(Var.)	Clear.
9	30.023	.070	31.00	18	26.	(Var.)	do.
10	29.881	.020	43.00	18	26.3	N.	Morn. cloudy, aft. and ev. clear.
11	29.897	.032	44.00	18	32.	N.W.	Clear.
12	29.960	.074	43.00	14	36.	N.W.	M. and ev. clear, aft. cloudy.
13	29.969	.082	39.50	11	33.3	N.N.E.	M. and aft. cloudy, ev. clear.
14	30.012	.057	36.50	11	32.7	N.	Clear.
15	29.938	.074	36.50	13	31.3	N.N.W.	do.
16	29.848	.142	33.50	5	33.7	S W.,N.W.	M. cloudy, aft. and. ev. foggy.
17	29.436	.555	39.00	10	39.3	E.N.E.	M. fog; cl'y; *R.* 11 A.M. to 10 P.M.
18	29.418	.549	35.00	15	27.	NW,W,SW	M. and aft. cloudy, ev. clear.
19	29.756	.061	31.75	8½	26.7	S.E.	Cloudy, 4½ P.M. *S.* stop dur. night
20	30.134	.231	24.00	10	24.3	N.W.	M. and ev. clear, *S.* 2½ to 3 P.M.
21	30.199	.139	22.50	9	20.	S.W.	M. and ev. clear, aft. cloudy.
22	30.098	.097	32.00	14	29.7	S.W.	M. and aft. cloudy, ev. clear.
23	29.603	.182	32.00	20	42.	W.N.	M. foggy, aft. cloudy, ev. clear.
24	29.854	.021	25.00	8	22.	W.	Clear.
25	29.867	.021	28.00	12	29.3	S.W.	do.
26	29.473	.130	35.00	14	28.0	SW,WNW	M. and ev. clear, aft. cloudy.
27	29.701	.140	32.00	8	22.	N.W.	do. do. do.
28	29.607	.307	35.50	15	33.7	(Var.)	Cl'y; *R.* 5 P.M. soon changed to *S.*
29	29.509	.310	19.00	8	16.	N.W.	M. cloudy, ev. clear. [strong w.
30	29.651	.223	22.50	23	23.	E.S.W.	Cloudy, *S.* storm 11 A.M. to 6 P.M.
31	29.705	.088	31.50	11	34.7	(Var.)	do. *S.* 9½ P.M, stop dur. night.
Mean	29.869		33.81		29.83	N.W.	Rain and melted snow during the month 2.165 inches.
High.	30.288	on 21st	56° on 6th.		46.7 on 6th.		
Low.	29.115	on 17th	11° on 30th.		16.0 on 29th.		
range	1.173 inch.		45°		30.7°		

Abstract of Meteorological Observations made at Philadelphia, Pa., for the year 1853. By Prof. J. A. KIRKPATRICK.

Month.	Barometer reduced to 32° F.				Thermometer.				Dew Point 2 P. M.				Latitude 39° 57′ 28″ N. Longitude 75° 10′ 40″ W.		
	Mean. Inches.	Highest. Inches.	Lowest. Inches.	Range. Inches.	Mean. deg.	Highest. deg.	Lowest. deg.	Range. deg.	Mean. deg.	Highest. deg.	Lowest. deg.	Range. deg.	Rain and Snow. Inch.	Wind. Points.	Remarks.
January,	29.971	30.709	28.920	1.789	32.02	52	9	43	29.32	43.3	15.7	27.6	1.84	N.W.,W.,N.E.	Warmest
February,	29.946	30.343	29.065	1.278	35.99	59½	15	44½	35.75	58.3	24.7	33.6	4.44	N.W.,W.	day, June
March,	29.873	30.345	29.320	1.025	41.80	70	17	53	32.67	55.7	13.0	42.7	2.46	WNW,W,SW.	22d.
April,	29.850	30.225	29.231	.994	52.15	79	34	45	40.30	58.3	26.7	21.6	3.88	S.W.,N.E.	M. Temp.
May,	29.888	30.286	29.489	.797	63.10	87	44	43	49.29	61.3	33.7	27.6	5.17	S.W.	86½
June,	29.987	30.226	29.746	.480	73.58	97	50	47	54.17	65.7	38.7	27.0	1.05	S.W.,N.E.	Th. highest
July,	29.955	30.146	29.609	.537	75.11	95	61	34	57.58	70.3	38.0	32.3	8.63	N.E.,N.	June 22,97°
August,	29.913	30.097	29.597	.500	74.85	94	55	39	59.31	70.0	42.7	27.3	3.08	S.W.	Coldest day
September,	29.976	30.246	29.546	.700	68.32	91	41	50	54.19	67.7	34.3	22.4	4.46	S.W.,N.W.	Jan. 16th.
October,	29.974	30.331	29.512	.819	53.21	75	35	40	39.91	65.0	26.3	38.7	3.47	SW,NW,WNW.	M. Temp.
November,	30.157	30.502	29.467	1.035	47.13	64	21	43	42.22	61.7	25.3	35.4	2.32	SW,NW,NE.	16½.
December,	29.869	30.288	29.115	1.173	33.81	56	11	45	29.83	46.7	16.0	30.7	2.16	NW,SW,NE.	Th. lowest
															Jan. 17, 9°.
Ann. Mean.	29.947	30.709	28.920	1.789	54.26	97	9	88	43.71	70.3	13.0	57.3	42.96	SW,NW,NE.	Barometer.
															Highest
Winter,	29.965	30.709	28.920	1.789	34.60	62	9	53	34.20	58.3	15.7	42.6	11.46	N.W.,W.	30.709 Jan. 28
Spring,	29.870	30.345	29.231	1.114	51.90	87	17	70	40.75	61.3	13.0	48.3	11.51	S.W.	Lowest
Summer,	29.952	30.226	29.597	.629	74.01	97	50	47	57.02	70.3	38.0	32.3	12.76	S.W.,N.E.	28.920 on
Autumn,	30.036	30.502	29.467	1.035	56.22	91	21	70	45.44	67.7	25.3	42.4	10.25	S.W.,N.W.	Jan. 23d.